REPORT RESUMES

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A STUDY OF THE EDUCATIONAL NEEDS OF ADULTS IN WYOMING, A STUDY OF POST-HIGH SCHOOL EDUCATIONAL PROGRAMS AND NEEDS IN WYOMING.

BY- O'DELL, EARL D. THOMPSON, JOHN T.
WYOMING UNIV., LARAMIE, DIV. OF ADULT EDUC.
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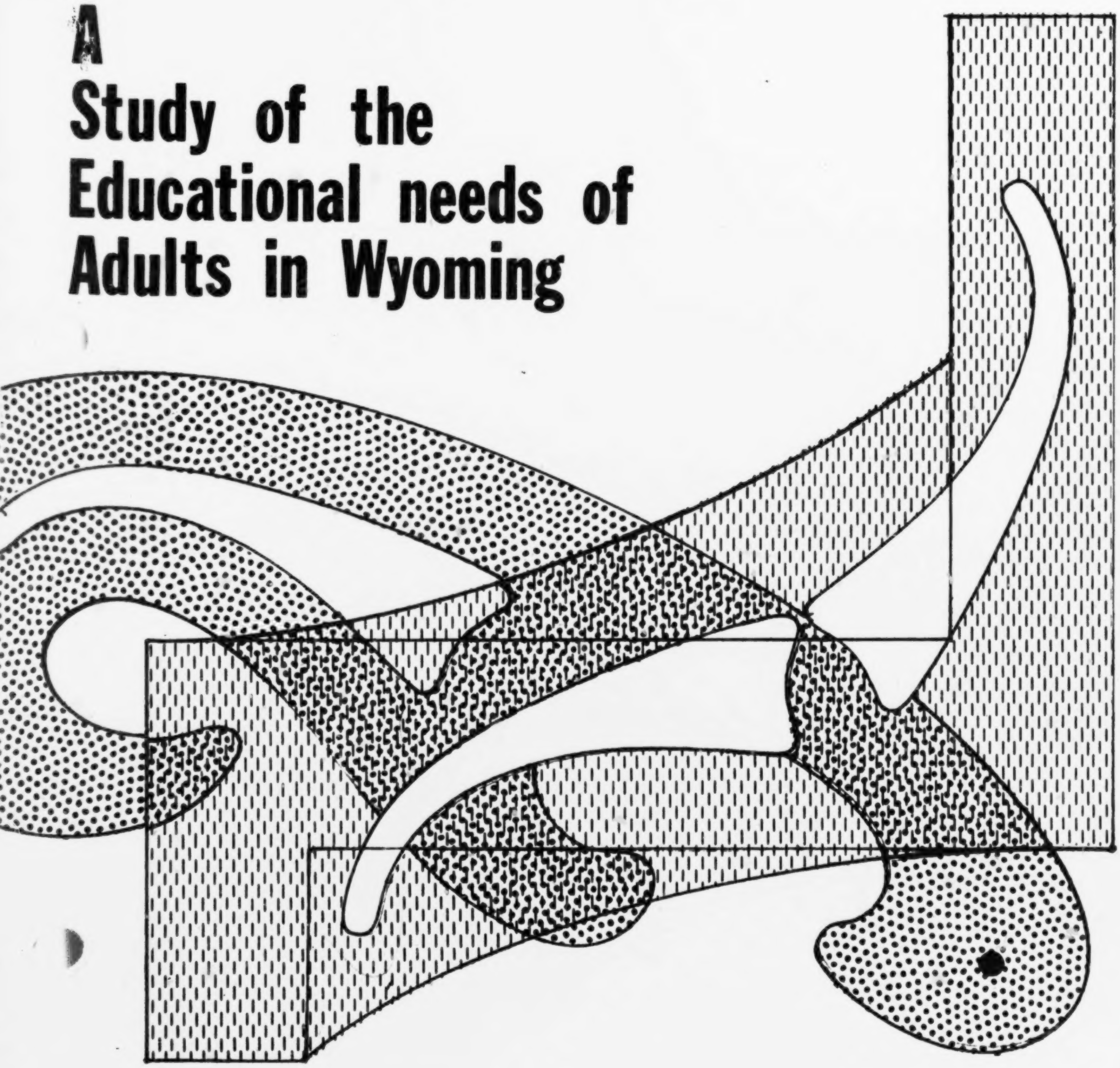
THIS IS THE REPORT, FROM THE ADULT EDUCATION DIVISION OF THE UNIVERSITY OF WYOMING, OF A SURVEY MADE IN 1965 OF ADULT EDUCATIONAL NEEDS IN THE STATE. THE PURPOSES OF THE STUDY WERE TO POINT UP POSSIBLE IMPROVEMENTS IN CURRENT EDUCATIONAL PROGRAMS AND TO PROVIDE A DESIGN FOR INTELLIGENT PLANNING FOR FUTURE NEEDS. FOUR MAJOR TASKS WERE UNDERTAKEN--(1) AN ANALYSIS OF SOCIAL AND ECONOMIC CONDITIONS WHICH INFLUENCE EDUCATION, (2) A DEFINITION OF THE ROLE, PURPOSES, FUNCTION, AND NEEDS OF HIGHER EDUCATION, (3) AN ANALYSIS AND APPRAISAL OF EXISTING PROGRAMS AND SERVICES OF POST-HIGH SCHOOL AND ADULT EDUCATION, AND (4) RECOMMENDATIONS FOR IMPROVEMENT. NUMEROUS TABLES AND FIGURES ARE INCLUDED. (PG)

A
Study of the
Educational needs of
Adults in Wyoming



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DIVISION OF ADULT EDUCATION
AND COMMUNITY SERVICE

UNIVERSITY OF WYOMING

U. S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
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The Division of Adult Education and Community Service at the University of Wyoming expresses its sincere appreciation to the Office of Economic Opportunity for the extremely valuable assistance which made this study possible. We particularly note the contributions made by Miss Carol King of the Kansas City regional office who has worked with us and extended invaluable advice and contributions.

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A STUDY OF THE EDUCATIONAL NEEDS OF ADULTS IN WYOMING

A Study of
Post-High School Educational Programs and Needs in Wyoming

By
Earl Douglas O'Dell
John T. Thompson

TO: Dr. John E. King, President, University of Wyoming

RE: The State-Wide Study of Educational Opportunities, Programs and Needs.

FROM: The Division of Adult Education and Community Service

The staff of the Division of Adult Education and Community Service remained virtually unchanged for a long period of years. Consequently, the services rendered through the efforts of this staff were virtually frozen with minor adjustments. Several years ago the staff began reviewing existing programs and attempted to match them with state-wide needs as they appeared at that time. It soon became apparent that more than a casual review was necessary in order to be reasonably sure that our Division was accomplishing those things which the state expected of it.

While we were in the process of mentally reviewing the situation, we were visited by Mr. Fred Baldwin of the newly established Office of Economic Opportunity. He suggested that a review of the entire situation in Wyoming would be of immense value to his office in assisting those people whose inadequate preparation made them unemployable. As a result, a group of some thirty people representing all areas of education, welfare, employment, etc., in Wyoming was called together.

General plans for this study were drawn up. Actual preparation of the study was under the direction of Dr. E. D. O'Dell, Coordinator of Research for the Division. He was assisted by Dr. John Thompson, on loan from the Department of Political Science, and Owen Hodgell, on loan from the Wyoming Taxpayers Association. We believe the resulting production to be of marked value to the people of Wyoming.

FOREWORD

Rapid technological change, coupled with the largest population increase in our history, has added a new dimension of complexity to today's social and economic problems. Educational policy, particularly the post-high school and adult educational policies, has taken on increasing importance in contemporary public affairs. Recognition of the need for reappraising the state's post-high school educational policy led to this study.

On January 6, 1965, a state-wide technical assistance committee, a group made up of persons from all the major interests in the state, instructed the Adult Education Division to initiate a study of the needs for education of adults in Wyoming. Negotiations were entered into with the Office of Economic Opportunity and a grant of $25,000 was received to conduct a study of overall adult educational needs in Wyoming. After the grant was received a more formal "Council for Economic Opportunity," made up of 24 people representing various segments of the state's population, was created to give direction to the study and to implement its findings.

The purpose of the study was twofold: (1) to point up possible improvements in current educational programs in Wyoming and (2) to provide a design for intelligent planning to meet future needs.

To achieve this purpose four major tasks were undertaken: (1) an analysis of social and economic conditions which influence education in Wyoming and the nation; (2) a definition of the role, purposes, functions, and needs of higher education; (3) an analysis and appraisal of existing programs and services of post-high school and adult education; and (4) recommendations for improvement.

The survey relied heavily upon the extensive participation of many persons including college and university personnel, governmental officials, community leaders, the State Department of Education, the Wyoming Employment Security Commission, the State Labor Department, and various consultants in higher education. Cooperation in the gathering of information and making of projections was obtained from each of the respective institutions and economic groups involved, and much of the data gathering and projection was done by these groups.

In keeping with the mandate of the Council for Economic Opportunity, the survey staff assumed full responsibility for preparing all final reports and for all conclusions and recommendations which the report included.

Grateful acknowledgement is here made to the many lay citizens, the government officials, the college and university personnel, the consultants, and to other persons who, despite their already heavy duties, added their time and contributions to the study.

A WYOMING OFFICE OF ECONOMIC OPPORTUNITY PROJECT

Cooperative Agencies for the Study

University of Wyoming
Wyoming Community Colleges
Federal Offices in Wyoming
Governor's Office
State Agencies
Private Organizations

Executive Committee for Wyoming Office of Economic Opportunity

Ernest V. Sones
Louis M. Groh
Ray Burgess
Warren C. Van Horne
Norman Smith
Paul Bachman
Loyd Breakey
Reverend John Tierney
Robert Alberts

Special Staff Members

Earl Douglas O'Dell	Co-Director
John T. Thompson	Co-Director
Owen Hodgell	Research
Mrs. Phyllis Matz	Secretary
Sidney G. Tickton	Consultant
John W. Gates	Director, Division of Adult Education and Community Service

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CHAPTER I

CHANGES AFFECTING AMERICAN POST-HIGH SCHOOL EDUCATION

The United States, at the middle of the sixth decade of the twentieth century, is a far different nation from what it was at the turn of the century, or even in the period just prior to World War II. Viewing the economic and social situation of the United States from our present vantage point presents us with a startling picture of the alterations and modifications which are being made to our society. Changes in the economy and the society of the nation have become so accelerated that even those whose jobs are to record and document what is happening are astounded by what they see and are often hard pressed to stay abreast of the alterations as they occur.

Evidence of the dynamics of our society can be seen from the fact that within less than one generation we have witnessed a host of miraculous developments in science and technology. For instance, today the communications industry places heavy reliance on microwave relay systems to transmit telephonic messages. Over 73 million miles of microwave circuits form a web-like network across our nation from coast to coast and border to border. The time-span for the accomplishment of this feat has been extremely short, since the first continental microwave link was completed only 14 years ago. Even more dramatic is the communications satellite which makes possible direct calls to foreign countries via man-made "heavenly bodies." It was only 10 years ago that the first detailed proposal for a communication satellite system was advanced. Television has grown since World War II from an infant to a giant, and the transistor, which has made possible the new achievements in communications, was born just 17 years ago. Similarly developments have occurred in transportation since World War II. Supersonic jet aircraft and rockets have been developed so that no place on earth is more than a few hours away, and space travel is our new frontier. Distance has largely been overcome by the recent innovations.[1]

Energy sources have been revolutionized by atomic energy. Automated machinery has reduced the needs of human labor and made possible seemingly ever increasing productivity. Nuclear power, demonstrated just 20 years ago in the New Mexico desert, soon will produce 6.5 million kilowatt hours of electrical power to drive the automated machinery directed by computers developed in the last 13 years. These innovations promise a harvest of products and an economy of abundance.

Biological and chemical advances have been equally spectacular. A wealth of new products has been created as the result of the new discoveries--plastics; man-made fabrics such as orlon, nylon, and dacron; miracle drugs including penicillin, terramycin, aureomycin, and declomycin to mention just a few. Agricultural yields undreamed of just a few years ago are now common as a result of the application of science to farming. The rapidity of change can be found in the realization that the major portion of all the goods and services we use today were either unknown or insignificant in 1923, and that many of our common, present day products have been created since World War II.

Medical science has removed the age-old curse of many diseases, and has greatly increased the length of life in recent years. The death rate for babies, for instance, has dropped 54 percent in the past 25 years. Babies born this year have life expectancies 10 years longer than those of their parents. Twenty years ago pneumonia stole the life of one out of every three of its victims; today only one patient out of 27 dies of this ailment. Also, 20 years ago drugs in themselves cured very little though they did make the patient more comfortable. Today drugs actually help cure people. They help cure mental as well as physical ailments with the result that today there are actually fewer people in mental hospitals than in 1955.

---

[1] Many of the ideas for this section were adapted from an unpublished speech by W. K. Koch entitled "Science, Technology, and Our New Economy" delivered at the Rocky Mountain States Governors' Conference to Accelerate the Regional Economy by Broader Application of Science and Technology, October 14, 1965.

The true dimensions of the important advances in science and technology are illustrated by the fact that within the last 20 years alone the body of scientific knowledge has multiplied at least four times. Some 1,200 new patents are issued each week to reflect this growth of scientific knowledge. One regional office of the National Aeronautics and Space Administration in New Mexico alone is adding 50,000 documents a year detailing knowledge originating in our space race.

In addition to these changes, our society has been transformed by a number of other forces. We have witnessed since World War II a veritable population explosion, which, in turn, has added a new dimension of complexity to the problems relating to employment, education, welfare, and community life. Our people have obtained a new-found mobility that has never been experienced before in history, and the trend toward urbanization of our country has continued at an increased rate. In addition, we have seen in our time a political revolution throughout the world which has altered the governmental environment in many countries and has forced upon our nation a new role of world leadership.

Today, change permeates the entire spectrum of our existence and has ramifications throughout our society. New social, economic, and governmental problems have developed which demand new solutions. Educational policy particularly must be reappraised if our educational system is to prepare people to live in a world which is not the same today as it was yesterday, and which will not be the same tomorrow. The purpose of this chapter is to examine the implications of the major socio-economic developments and to consider the effects on our educational policy.

Population Changes

One of the most dramatic changes we have witnessed has been in the area of our population; first, in terms of total growth, and second, in terms of its character and composition. After the First World War, and continuing up through the depression years of the 1930's, some economists expressed concern that our population growth was leveling off, that the birth rate was declining, and that we were to witness a stagnation in this area of our national life. Then came World War II and the post-war "baby boom." We were exploded into a new era with the much-talked-about and much-publicized concern over what has become known as the "population explosion." For a while, experts viewed the increased birth rate as a temporary transitory period. However, when fertility remained high well into the 50's and even accelerated in the period 1951-57, demographers were forced to admit that a fundamental change had occurred, and that American couples favored larger--not smaller--families. Thus, some 15 years of high birth rates and gradually falling death rates have resulted in a much larger population.[2]

---

[2] Projections to the Years 1976 and 2000: Economic Growth, Population, Labor Force and Leisure and Transportation: (Washington, D. C.: Report to the Outdoor Recreation Resources Review Commission, Bureau of Labor Statistics, U. S. Department of Commerce, 1962) p. 9.

The situation today remains one of high growth and high growth potential. Birth rates in the United States have fallen slightly in the last few years, but most demographers are cautious in taking this as any indication of a downturn in the trend. With the tremendous influx of young people, it appears that another wave of marriages and births will occur in the 1980's. The population is expected to rise to around 210 million by 1970 and 250 million by 1980.[3]

The internal changes within the population which accompanied this growth also have had a major impact on our society. The make-up of the population in terms of age groupings, longevity, number of children per family, age of marriage, has changed since the pre-World War II era. Some of these internal changes are shown in the population pyramid by age composition for 1940, 1950, and 1960 (Figure 1). The most dramatic change is the tremendous increase in the number of young people. In 1960 there were 26,699,912 more youngsters in the age bracket 1 to 19 than there were in 1940, and 17,622,053 more than in 1950--which amounts to a nine percent increase from 1940 to 1950, and a seven percent increase from 1950 to 1960. This flood of children and youth is now requiring further schooling, and will enter the labor force during the next few years. Another major change to be noted from the population pyramid (Figure 1) is at the top of the pyramid, representing our older citizens. The number and percentage of people over 65 are shown to be greater for 1960, while the middle age groups, which predominately make up the employed labor force today, are slightly smaller or about the same as in 1940 and 1950. Obviously, these population changes have had a major impact upon our economy and our educational policies.

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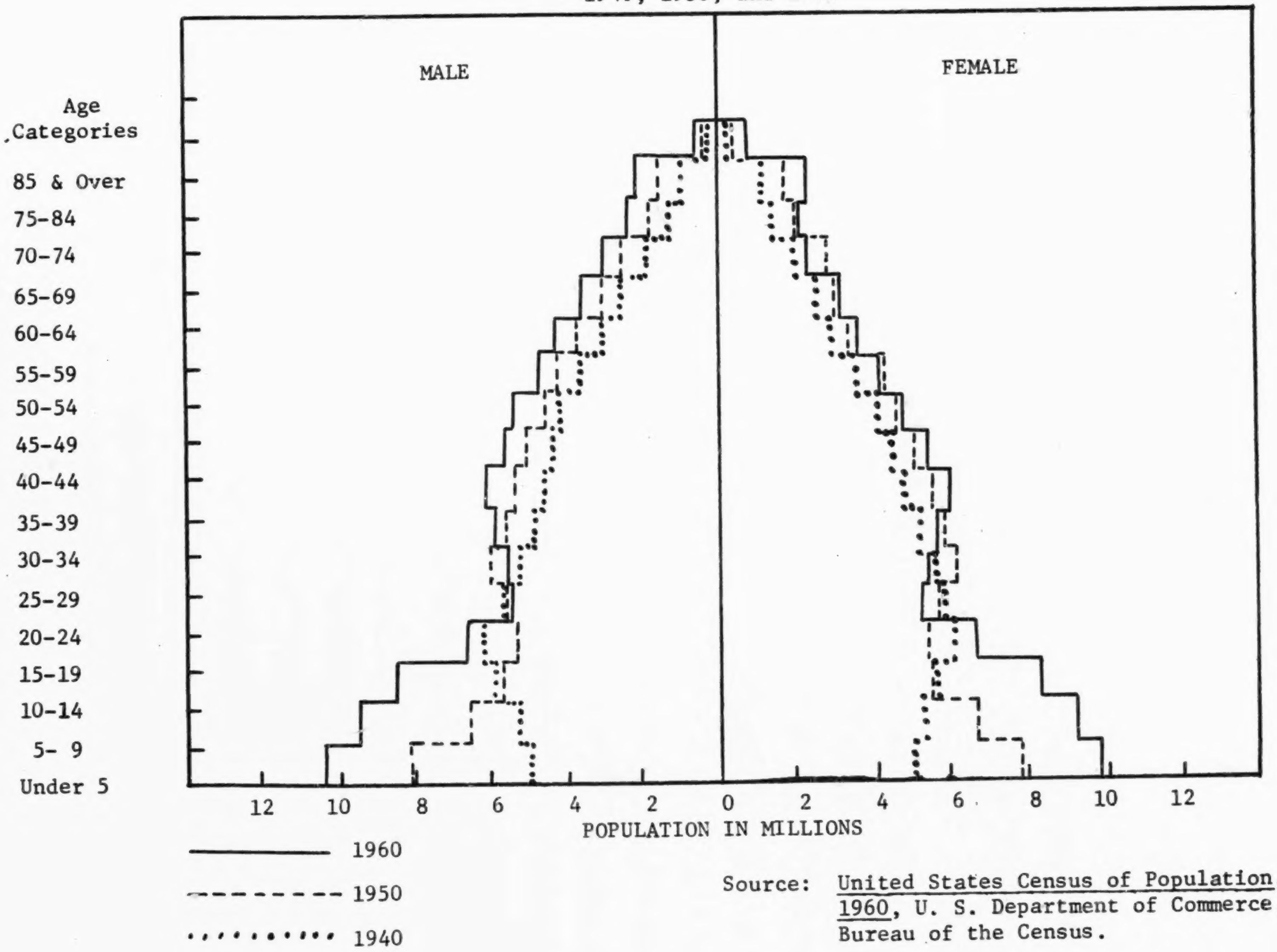
[3] Ibid., pp. 9-10.

Figure 1
POPULATION OF THE UNITED STATES:
1940, 1950, and 1960



Source: United States Census of Population, 1960, U. S. Department of Commerce, Bureau of the Census.

Labor Force Changes

Employment problems confronting the nation as a result of the population changes are different from those of recent decades and may be more difficult than any we have ever faced in the past. Changes in the labor force have been directly affected by the large increases among adolescents, young people, and people over 45. A tremendous number of new workers will enter the labor force during the next 10 years. The largest growth for the rest of the 1960's, as can be seen from Figure 2, will be in the 18 to 24-year-old category. The labor force increases will exceed the increase in total population because of the large number of young people. The decade of the 1960's will have by far the largest increase in the labor force for any 10-year period in our history--50 percent greater than in the 1950 decade.[4]

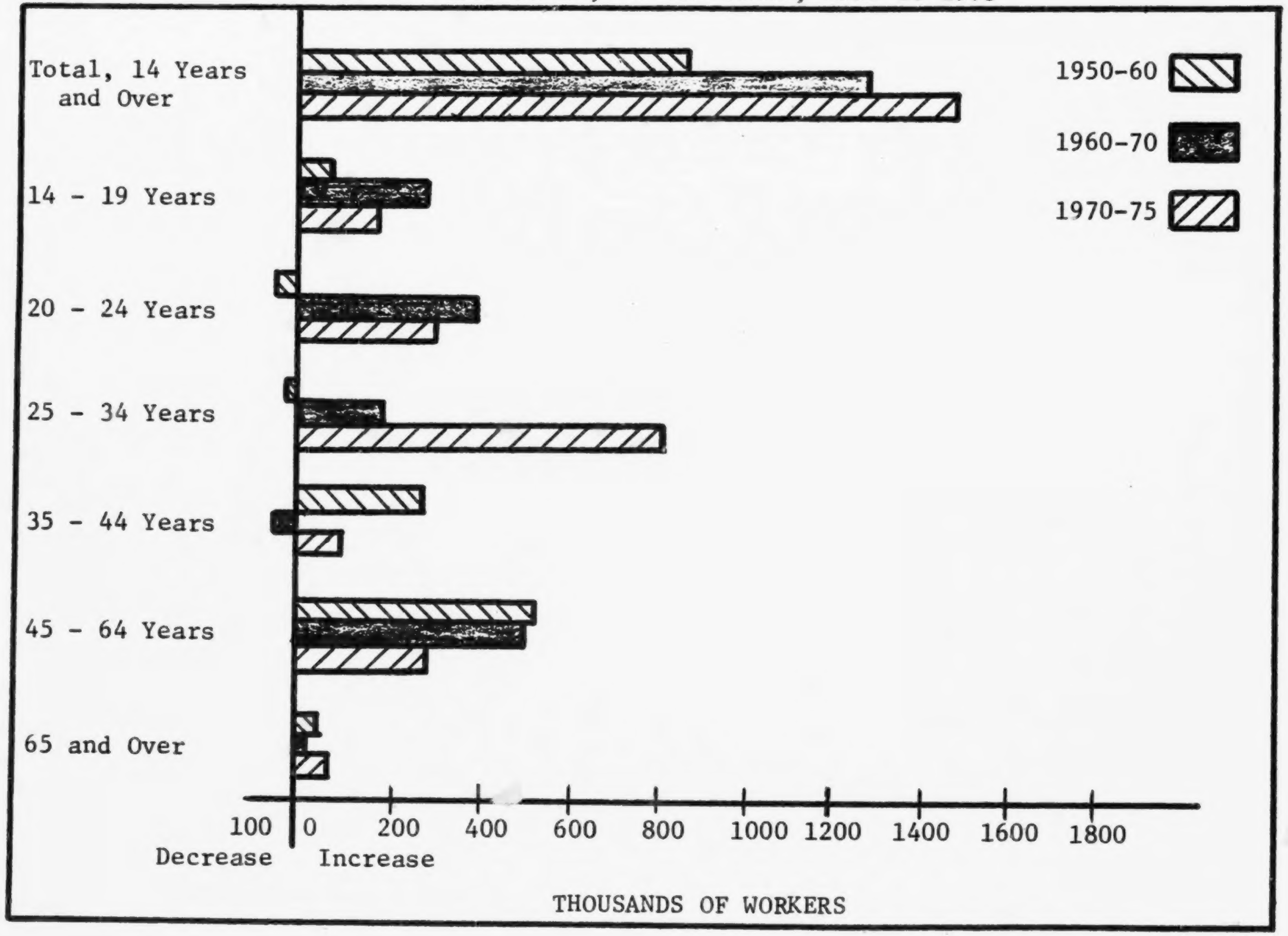
During the 1950's the number of youth entering and leaving the young worker classification remained relatively stable. In 1960 the total number of young workers in the labor force was only four percent greater than it had been in 1950. However, the major influx into the work force of young people born in the baby boom years following World War II began between 1963 and 1964 with the growth of one and one-fourth million young workers. The increase in 1964 was 175,000 larger than in 1963 and 500,000 above the average for the years 1957 to 1963. It is expected that the labor force will increase at the rate of one-half million a year between 1964 and 1970. This means that some nine million jobs--one and one-half million a year--must be generated by 1970 merely to accommodate the growing labor force.[5]

---

[4] Manpower Report of the President and a Report on Manpower Requirements, Resources, Utilization, and Training by the United States Department of Labor, (Washington, D. C.: U. S. Government Printing Office) March, 1965, p. 45. cf. Sophia Cooper and Dennis F. Johnson, "Labor Force Projections for 1970 to 1980," Monthly Labor Review, U. S. Department of Labor, Vol. 88, Feb., 1965, pp. 129-140.

[5] Ibid., p. 46.

Figure 2
ACTUAL AND PROJECTED AVERAGE ANNUAL CHANGE IN TOTAL LABOR FORCE, BY AGE GROUP, 1950 to 1975



Source: 1964, Manpower Report to the President, p. 36.

New projections of the labor force to 1980 indicate further increases in the already rapid rate of labor force growth (Table I).[6]

TABLE I
TOTAL LABOR FORCE, BY SEX AND AGE,
ACTUAL 1960 AND 1964, AND PROJECTED 1970, 1975, AND 1980
(Thousands)

Sex and Age	1960	1964	1970	1975	1980
BOTH SEXES					
14 years and over	73,081	76,971	85,999	93,646	101,408
14 to 24 years	13,697	15,963	20,303	22,524	24,020
14 to 24 years	977	1,142	1,382	1,463	1,466
16 to 19 years	5,223	5,896	7,188	7,865	8,110
20 to 24 years	7,497	8,924	11,733	13,196	14,444
MEN					
25 years and over	40,832	41,107	43,214	46,361	50,173
25 to 44 years	22,394	22,195	22,993	25,669	29,674
45 to 64 years	16,013	16,788	18,113	18,605	18,403
65 years and over	2,425	2,123	2,108	3,087	2,096
WOMEN					
25 years and over	18,552	19,902	22,482	24,761	27,215
25 to 44 years	9,484	9,805	10,449	11,706	13,733
45 to 64 years	8,114	9,129	10,942	11,850	12,142
65 years and over	954	966	1,091	1,205	1,340

Note: Detail may not add to totals due to rounding.

Note: These projections assume the highest levels of employment consistent with recent peacetime experience and may be slightly conservative in relation to rates of labor force participation which might be generated by a prolonged period of full employment.

Source: 1965, Manpower Report of the President, p. 47.

The creation of nine million new jobs during this 10-year period will be by far greater than the country's economy has ever had to generate in any comparable period. The magnitude of this task can be seen from comparisons of annual employment increases from 1947 to 1964 which averaged less than 750,000 jobs. In fact, in no comparable period since the end of World War II did the economy generate an average net increase of one and one-half million jobs a year. Even the short-term employment expansion during the Korean conflict was less than the rate of job creation that needs to be maintained for the next six years. Only in 1964, under the substantial stimulus to employment provided by the tax cut, were one and one-half million additional jobs created--just about equal to the number that will be needed annually to take care of the additional workers.[7]

---

[6] *Ibid.*, p. 46.

The total magnitude of the task facing the country, however, is not fully defined by these figures. Besides the increase in jobs needed for the ever-larger numbers entering the labor force, employment must be generated to reduce unemployment to a more tolerable level and to compensate for jobs eliminated by automation and other improvements in technology.

Technological Change

The employment problems caused by the rapidly growing population are greatly complicated by revolutionary changes in our technology. During the past 25 years our industrial and economic arena has been characterized by fantastic forward leaps in the advancement of scientific and technological "know-how." Feats that a few years ago were thought to be only within the realm of science fiction have now become realities, and other accomplishments that were thought to be too fantastic even for science fiction are now on the threshold of actuality.

Innovations of automated machinery and computers in industry and commerce make it possible to do a number of tasks with machines cheaper, faster, and better than can be done by men. Today automated machinery can perform innumerable jobs. They can mine coal, control and regulate oil field production, cast and finish engine blocks, sort bank checks, and roll aluminum as well as do a host of other jobs. With computers, which have calculating speeds measured in millionths of a second, we can perform many other traditionally human tasks. Tasks involving experience, memory, analysis, logic, and decision-making can be done by these modern "thinking machines." These devices now can diagnose symptoms for the physician, research a case for the lawyer, read envelopes for the postman, check flight clearances for airlines, compute insurance and financial schedules, keep inventory for the merchant, and numerous other similar activities.[8]

---

[7] Ibid., p. 46.

This rapid technological innovation, as President Kennedy pointed out in the first Manpower Report, promises a future in which material want will be all but unknown. Already a harvest of economic miracles has been produced by these technological innovations. Economic growth in the United States--as measured by gross national product in constant dollars, including general government activities as well as the private economy--increased from 234.6 billion dollars in 1947 to 622.3 billion dollars in 1964, an increase of 165.5 percent in this 17-year period.[9]

This increase in the total output of the nation has resulted in a general rise in the standard of living for the general populace. Not many years ago a relatively large proportion of our population was at, or just above, the minimum level, but that segment of our population has been relegated to a minority position. An affluence never before witnessed in history is enjoyed by more and more of our people. However, we still do have a portion of our people in an economic posture that can be characterized as "poverty." These generally are the unemployed, the people without salable skills, and the ones who are the last to be hired and the first to be fired. The paradox of the situation is that the same technological developments which are making possible the increased productivity and affluence are at the same time aggravating the employment and poverty situation of those with the least training, education, and experience.

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[8] Grant Venn, Man, Education and Work, (Washington: American Council on Education, 1964) pp. 5-6.

[9] Computed from Table B-1, 1965 Economic Report of the President, op. cit., p. 189.

Productivity has risen in the United States since World War II at a rate above that for the last half century. Output per man-hour of all workers in the private economy increased almost 70 percent (69.96) over the post-war period 1947-1964.[10] This was equivalent to an average gain of 4.1 percent. In comparison, from 1909, the first year for which suitable measures are available, to 1961, the average annual gain in output per man-hour was 2.4 percent.[11]

Increases in productivity have varied in different sectors of the economy. Agriculture has had the most spectacular increase--an amazing 167.73 percent increase in output per man-hour from 1947 to 1964.[12] Agricultural employment declined in this period at the rate of about 200,000 per year.[13] In the non-agricultural sector, the productivity growth has not been as rapid but has witnessed a 50.46 percent increase in output per man-hour in this period.[14]

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[10] Computed from the "Index of Output Per Man Hour, 1947-1964," Table B-32, Economic Report of the President, p. 227. This Table is reproduced herein as Appendix Table I.

[11] 1963, Manpower Report of the President, op. cit., p. 67.

[12] Computed from the "Index of Output Per Man Hour, 1947-1964," Table B-32, 1965 Economic Report of the President, op. cit., p. 227.

[13] 1963, Manpower Report of the President, op. cit., p. 16.

Within the non-agricultural economy, some industrial groups have achieved more rapid gains in productivity than others. The industries with greatest rates of increase in output per man-hour have been those which have made rapid technological advances. Mining, communication, public utilities, and transportation industries have had tremendous increases in productivity in the post-war period.[15]

The coal industry is an example of an industry which has made rapid and extensive technological changes, including both increased mechanization and improved handling techniques. One of the very far reaching post-war developments in mining has been the introduction of continuous mining machinery. This machinery integrates cutting and loading operations into a continuous sequence requiring a minimum of human intervention. The machinery tears the coal from the seam, scoops it up, and loads it in one continuous operation, eliminating the time lost in performing these steps separately. Other innovations have occurred in loading and hauling operations, all of which have contributed to the growth in output per man-hour. As a result of these technological changes and a declining market for coal, employment in mining fell by more than one-third from 1947 to 1964, and it is predicted that employment in the mining industry will continue to decline over the next decade.[16]

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[14] 1965 Economic Report of the President, op. cit., p. 227.

[15] 1964, Manpower Report of the President, op. cit., p. 49.

[16] 1965, Manpower Report of the President, op. cit., p. 53; cf. 1963, Manpower Report of the President, op. cit., pp. 74-76.

The railroad industry is another industry that has experienced higher-than-average increases in output per man-hour. A variety of technological changes has affected railroad productivity in the post-war period. The replacement of steam locomotives by diesel-electric units made possible not only greater loads and higher speeds but also lower maintenance costs. Improvements in rolling stock and a host of new labor saving machines for track laying, roadbed tamping, cleaning of equipment, and general maintenance all increased productivity and reduced employment needs of the railroads. Furthermore, centralized traffic control, electronic classification yards, improved signaling and communication systems have increased the speed of rail movement and can afford more efficient use of facilities. These advances in technology and productivity, together with the post-war decline in railroad traffic, especially passenger traffic, have resulted in a substantial drop in some railroad occupational groups.[17]

The rapid pace and pervasiveness of technological change in American industry could be documented in almost every industry, but it is apparent from this brief review that these changes have had a major impact on the American economy. In addition to an increase in productivity per man-hour, rapid technological change has caused a major employment dislocation. Manpower requirements of the nation have been profoundly altered by the innovations, and greater changes are predicted for the future.[18]

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[17] 1963, Manpower Report of the President, op. cit., pp. 74-75. Also see 1964, Manpower Report of the President, op. cit., p. 59.

[18] 1965, Manpower Report of the President, op. cit., pp. 29-30.

Some Manpower Implications of Technological Change

One major change is the increasing premium placed on skilled labor and the diminishing need for unskilled labor. No longer is it possible for a person poorly equipped for employment in an educational sense, functionally illiterate and with no special training, to secure work. Machines replace unskilled workers readily, and even semi-skilled and skilled workers must cope with automation and industrial development. There is a cruel irony in this situation. Just at the time when the number of relatively untrained, unskilled young people are coming into critical oversupply, the kinds of jobs that they can do are at the same time vanishing due to the elimination of many unskilled occupations by automation. The tragedy of the situation is seen in the fact that the greatest percentage of unemployment is among this group of youth.[19]

Evidence that unskilled and untrained laborers are fast becoming obsolete as effective components in our economic system can be seen by the disappearance of jobs which were traditionally filled by unskilled and untrained young people in the past. Much manual labor in the lifting and in the moving and loading of goods has been eliminated by increasing mechanization of material handling. Factory jobs involving direct step-by-step manipulation of equipment or materials or manual tending of machinery are also becoming relatively fewer. There are also fewer young telephone operators, fewer elevator operators in office buildings and hotels, fewer farm laborers, fewer coal miners, and even fewer ditch diggers. Many routine office jobs in accounting, addressing, billing, inventory control, payrolls, and other record-keeping also have been eliminated by electronic data processing. These and many other unskilled job opportunities are now being done by machines. This trend is expected to continue. Over the next decade it is estimated that more than two million jobs will be vacated as a result of technological advances and improved productivity, and that the heaviest impact will be on unskilled jobs.[20]

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[19] Ibid., pp. 29-30.

Many older workers are also threatened by the diminishing need for unskilled labor. Compared to other age groups in the labor force, the older worker has little formal education, and the skills he possesses may be obsolete. Furthermore, older men are typically more dependent then younger men on the declining farm sector and other job categories where relatively little long-range employment growth is anticipated. This threatening situation is occurring at the same time the number of men age 45 and over is increasing. Between 1964 and 1970 the increase in the labor force for the younger men should be about three and one-half percent, in contrast to an expansion of nearly seven percent for the older men.[21]

Another significant change in employment resulting from the advancing technology is the expansion of the number of jobs requiring a high level of education and training. Professional and technical workers, already at a premium, continue to be the fastest growing occupations and are anticipated to continue to be during the next decade. Demands for engineers, scientists, and technicians will rise rapidly as technology grows and becomes more complex. Business expansion and a greater population will enlarge needs for educators, doctors, economists, statisticians, accountants, social workers, and many other professional people. Personnel needs are expected to rise substantially in practically every professional field. In addition, greater business planning and mass marketing will increase substantially the number of clerical, sales, and managerial jobs.[22] Figure 3 shows the areas of job opportunities in the next decade. As can be seen, the overall trend is for more highly educated or trained white-collar workers.

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[20] Ewan Clague and Leon Greenberg, "Technological Change and Employment," Monthly Labor Review, U. S. Department of Labor, July, 1962; cf., 1963 Manpower Report of the President, op. cit., p. 55.

[21] 1965, Manpower Report of the President, op. cit., p. 22.

Implications for Education and Training

What does all of this mean to education? First, education will get more emphasis, and our educational system will be called upon to do a more effective job of educating people, not only in the traditional academic and graduate areas, but also in the vocational and technical areas. Our educational institutions are going to have to provide education to a larger proportion of our people, and post-high school vocational and technical education will have to be developed for those who are not going to be going on to colleges and universities for the time-honored educational-professional-liberal arts programs.

A high school diploma is today a minimum requisite for most production workers, and a bachelors degree, often in engineering, may be a requisite for the foreman or supervisor. A college education is the only ticket for entry into the professions, with graduate study often a necessity for advancement. The technical, skilled, and semi-professional occupations all demand substantial amounts of post-secondary education for entrance. In the accelerating job upgrading process of technology there is a steady

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[22] Ibid., p. 54.

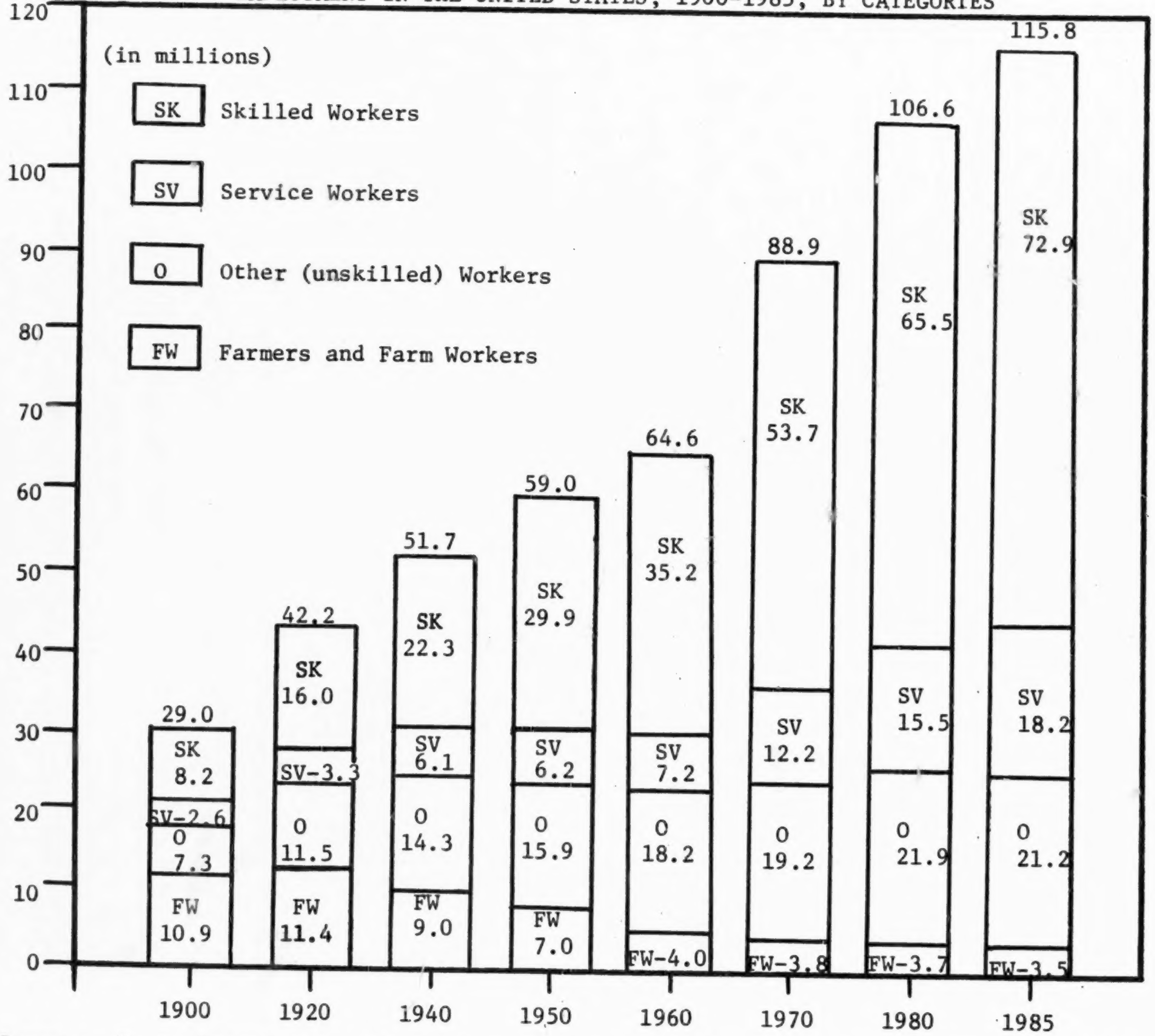
Figure 3
PROJECTED EMPLOYMENT GROWTH

Occupation	Decline	No Change	Less Than Average	Average	More Than Average
Professional, Technical and Kindred Workers					■
Service Workers					■
Clerical Workers					■
Sales Workers				■	
Managers, Officials and Proprietors				■	
Craftsmen				■	
Operatives			■		
Laborers (Nonfarm)		■			
Farm Workers	■				

Source: 1965, Manpower Report of the President, p. 53.

Figure 4

EMPLOYMENT IN THE UNITED STATES, 1900-1985, BY CATEGORIES



Source: U. S. Department of Commerce, Bureau of the Census Working Paper No. 5, 1958.

increase of higher education and skills needed for entry and retention into employment. Education has become the crucial ladder to the rewarding positions in society.

In the past, it may have been possible or even desirable, to teach technical and vocational occupations outside the regularly constituted and organized education system. Now, however, because technology is demanding workers with a degree of training and related education, it is thought best that technical-vocational training be offered within a system of education. The present nation-wide concern over vocational-technical education portends the development of new programs and institutions for offering this type of education.

The heavy influx of younger persons during the next 10 years, plus the changes in the productive processes, will result in a rapid rise in the average educational attainment of the labor force as a whole. The main reason for this upgrading has applied throughout our history--the average educational attainment of young entrants to the labor force is and always has been higher than that of workers reaching retirement. For instance, the median school year completed by the civilian labor force (18 to 65) in April, 1940, was 9.1 years; by October, 1942, it was 11.1 years; and by March, 1964, it was 12.2 years. This process is expected to continue. By 1975 it is anticipated that 62 percent of the adult work force will be high school graduates as compared with 54 percent in 1964. As can be seen from Table II, over 14 percent will be college graduates in 1975, up from 12 percent in 1964.

Despite this sizable upgrading, the nation's adult work force will still include a very substantial number of workers with limited amounts of formal schooling. The number with less than a four-year high school

TABLE II
EDUCATIONAL ATTAINMENT OF THE CIVILIAN LABOR FORCE, 25 YEARS OLD AND OVER, MARCH, 1964, AND PROJECTED, 1975
(Percent Distribution)

Years of School Completed		March, 1964	1975
Total:	Number (thousands)	59,638	69,957
	Percent Distribution	100.0	100.0
Less than 4 Years High School		46.2	38.5
4 Years High School or more		53.8	61.5
Elementary:	Less than 5 Years	4.2	2.6
	5 to 7 Years	9.1	6.6
	8 Years	14.0	8.8
High School:	1 to 3 Years	18.9	20.5
	4 Years	32.0	35.8
College:	1 to 3 Years	9.7	11.4
	4 Years or more	12.1	14.3

Source: Projections for 1975 by the U. S. Department of Labor based on data from the U. S. Department of Commerce.

education will decline only slightly from about 27.6 million in 1964 to about 26.9 million in 1975.

The majority of these educationally disadvantaged workers (about 60 percent) will be 45 years and over. Thus, there will be a continued need for programs of basic education and retraining designed to meet the special programs of many displaced older workers.

The effects on colleges and other institutions of education will be dramatic. College enrollments will increase 70 percent in the 1960's as compared with a 40 percent increase during the 1950's. This will demand more resources in staff, buildings, and money, new types of educational facilities to train a larger percentage of the high school graduates, more two-year programs to train skilled technicians, and more four-year and post-graduate institutions. These things are going to cost money, more than we have ever spent on education for this segment of our population.

However, the implication of a lack of education is so serious we still will have to plan for greater resources for education. In 1962, 20 percent of America's families were not participating in our unparalleled prosperity. About 9.2 million families in the nation had annual incomes of $3,000 or less in 1962. Most of these poor families had a head of household between 25 and 64 years of age with less than eight years of education. This creates not only personal problems but many of the social ills that plague us.

Education is not a cure-all for our economic ills, but without it there can be no systematic growth. To achieve a better life for our people we must see that the following educational goals are met:

1. The work force must be broadly educated as citizens and highly trained as workers if they are to understand and adjust to technological changes.
2. An adequate supply of professional and technical people must be trained to meet the growing needs. Here our shortages are critical--scientists, engineers, technicians, trained researchers, and competent teachers.
3. Vocational education must be geared to visible and continuing changes.
4. Education must be made a continuing life-long process.

Educating people to live in a world which is not the same today that it was yesterday, and which will not be the same tomorrow, is difficult. It is a many faceted task which requires a large amount of ingenuity, innovation, and inventiveness. Our future prosperity and well-being, to a large degree, depend on how well we meet the educational challenges of our time.

CHAPTER II

CHANGES AFFECTING WYOMING'S POST-HIGH SCHOOL EDUCATION

Wyoming has been greatly affected by the winds of change which have so dramatically transformed the nation. Although still a sparsely populated state, the forces of technology and urbanization have vastly altered the social and economic patterns in Wyoming from those of a quarter of a century ago. These fundamental trends are likely to continue, with the result that the future social and economic patterns of living in the state will be significantly different from those which exist today. These conditions present tremendous challenges to our state, particularly to education. The purpose of this chapter is to examine the changes which are affecting Wyoming and their implications to the state's educational system.

Population Changes

The "population explosion," which has so greatly augmented the nation's population since 1940, has not been felt in Wyoming. Wyoming remains one of the most sparsely populated states, as it has always been. Until 1950 Wyoming grew at a rate faster than that of the nation; however, since then it has grown at a slower rate than that of the United States and the Rocky Mountain area as a whole. The state's population increased from 250,742 in 1940 to 290,529 in 1950, and to 330,066 in 1960--an increase of 79,324 or a 31.6 percent increase for the 20-year period, and a 13.6 percent growth for the 1950-1960 decade. The national growth rate during the period 1950-1960 was 18.5 percent, somewhat larger than Wyoming's. Moreover, the state's growth has not kept up with the nation's during the 1960's. From 1960 to 1965 Wyoming's population increased to 338,570, only 2.6 percent[1] compared with a national average of 7.8 percent.[2]

Projections are that Wyoming will continue to be a slow-growing state for the foreseeable future.[3] The state's population is expected to grow at a rate of about 12 percent between 1960 and 1976, the lowest in the mountain region, and lower than the rate achieved during the 1950's[4] (see Table III). Although Wyoming's population problems will differ from

TABLE III
POPULATION PROJECTIONS FOR THE STATE OF WYOMING, 1950-1976

	In Thousands			Percent of National		
	1950	1960	1976	1950	1960	1976
Total Population	291	330	393	.19	.18	.16
% of Regional Population	8.35	7.64	6.74	---	---	---
Males as % of Population	53.26	51.21	46.82	107.25	104.00	95.16
25-64 as % of Population	47.94	45.15	38.17	96.03	97.26	92.60
Urban Population	145	188	248	.15	.15	.14
% of State Population	49.80	56.80	63.10	77.81	81.26	82.70
Net Migration (for Period)	---	-22.10	-83.20	---	---	---
Per Thousand of Population	---	71	230	---	---	---

Source: National Planning Association, *Regional and State Economic Projections Series: State Population, Labor Force, and Net Migration Trends to 1976*, (Washington, D. C.: National Planning Association, 1963) p. 89.

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[1] Gandi R. Rajender, "Population Estimates of Wyoming Counties--April 1, 1965," *Wyoming Trade Winds*, University of Wyoming, Division of Business and Economic Research, March-June, 1966, p. 17.

[2] U. S. Department of Commerce, Bureau of Census, *Population Estimate Series*, p. 25, No. 313, July 16, 1965.

[3] A number of projections of the state have been made. See: Floyd K. Harmston, "The Wyoming Economy," *Proceedings, Annual Wyoming Treasurers' School, April, 1962*, (Laramie: University of Wyoming, 1962) p. 26; and Herbert J. Sohler, *Economic Study of Wyoming* (Casper: Pacific Power and Light Co., 1961), p. 2.

[4] In light of the very slow growth from 1960 to 1965, these estimates of growth appear to be too large.

the nation's generally, Wyoming faces a number of serious challenges resulting from population changes. Changing population patterns of its people and a net out-migration of the most productive age groups seriously affect the state's ability to provide for its educational needs.

Changing Age Patterns. Changes in the age groupings of Wyoming's people have been similar to national changes since the pre-World War II period. The population pyramid (Figure 5), representing Wyoming's population for 1940, 1950, and 1960, shows variations in age groupings comparable to national developments during these years. The most significant change shown here is the relative gain of the dependent groups ("under 5," "5 to 19," and "over 65"). From 1940 to 1960 the dependent group of children and youth, the persons "under 5" and from "5 to 19" years of age, increased by 45,000 persons, and the "65 and over" group increased by 12,000.[5]

An analysis of the change in age distribution from 1960 to 1963 shows that the growth has been concentrated among the young, aged 5 to 17 and the 45-year-and-older persons who make up one half of Wyoming's population. From Table IV it can be seen that persons aged 5 to 17 and persons aged 45

TABLE IV
WYOMING RESIDENT POPULATION BY AGE: 1960 AND 1963

Age	April, 1960	July, 1963	Percent Change
Under 5	40,608	40,000	-1.5
5 to 17	86,948	92,000	5.8
18 to 44	115,153	115,000	-0.1
45 to 64	61,449	65,000	5.8
65 and over	25,908	28,000	8.1
TOTAL	330,066	340,000	3.0

Source: Wyoming Employment Security Commission, Wyoming Labor Force Trends, Vol. 1, No. 1, December, 1964.

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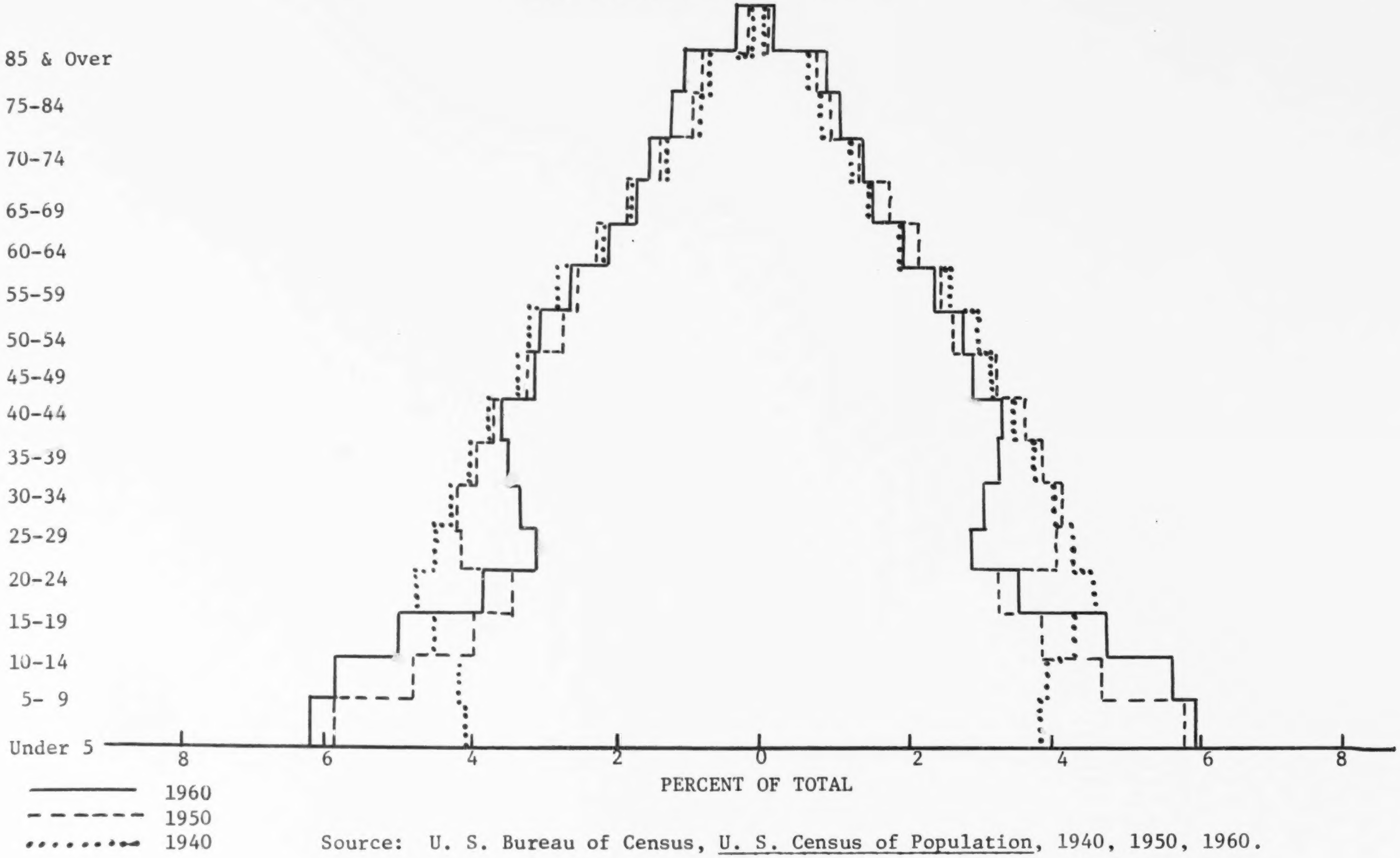
[5] Wyoming Employment Security Commission, Wyoming Labor Force Trends, Vol. 1, No. 1, December, 1964.

Figure 5
WYOMING POPULATION--1940, 1950, 1960



Source: U. S. Bureau of Census, U. S. Census of Population, 1940, 1950, 1960.

to 64 years, each increased 5.8 percent between 1960 and 1963, as compared with a 3.0 percent population gain for the state. The percentage distribution of Wyoming's population is shown in Table V.

TABLE V
PERCENT DISTRIBUTION OF WYOMING'S POPULATION BY AGE:
1960-1963

Age	April, 1960	July, 1963
Under 5	12.3%	11.7%
5 to 17	26.3	27.2
18 to 44	34.9	33.8
45 to 64	18.6	19.0
65 and over	8.3	8.3

Source: Wyoming Employment Security Commission, Wyoming Labor Force Trends, Vol. 1, No. 1, December, 1964.

On the upper end of the age spectrum, the proportion of persons over 65 has risen in Wyoming from about one in 20 persons in 1940 to one in 13 in 1960. More than three-fifths, nearly 16,000 of the 25,000, of the persons in the "over 65" group were 70 years old or older in 1960. The increase of the aged in Wyoming can be seen from the fact that the number of persons 85 or over increased from 767 to 1,264--a 64.8 percent increase--in the decade 1950 to 1960. From 1960 to 1963 the "over 65" age group had the largest percentage increase of any of the age categories in the state, an 8.1 percent increase (see Table IV).

The ratio between young and old and those in the "middle" age groups is of considerable importance. Those 18 through 64 years of age, in most cases, provide the sources of income for those under 18 and over 64, either through direct support or indirectly through public and private programs. This "dependency ratio", or proportion of the population in the dependent age groups, increased significantly from 1950 to 1960. Those in the "productive age groups" have been called upon to support more younger and more older people. Table VI reveals that the productive age groups have declined in the 1950-1960 decade from 58.6 percent of the population to 51.2

TABLE VI
POPULATION OF WYOMING BY PRODUCTIVE AND DEPENDENT AGE GROUPS 1940, 1950, 1960

Age Group	1940	1950	1960
	Population (Thousands)		
Total	251	291	330
Productive Age Groups, 18-64	147	166	169
Dependent Age Groups, Under 18-65 and Over	104	125	161
	Percent		
Total	100.0	100.0	100.0
Productive Age Groups, 18-64	58.6	57.0	51.2
Dependent Age Groups, Under 18-65 and Over	41.4	43.0	48.9

Source: U. S. Department of Commerce, Bureau of Census, U. S. Census of Population, 1940, 1950, and 1960.

TABLE VII
AGE COMPOSITION: WYOMING POPULATION COMPARED WITH OTHER STATES, 1960

State	Median Age	% Population 15-24 Years	State	Median Age	% Population 15-24 Years
Wyoming	27.3	13.6	Massachusetts	32.1	12.7
Nevada	29.5	13.3	Connecticut	31.9	12.0
Colorado	27.9	13.9	New York	33.1	12.1
New Mexico	22.8	15.1	Illinois	31.2	12.6
Montana	27.6	13.5	Missouri	31.6	13.0
Idaho	26.0	14.1	California	30.0	13.2
Utah	22.9	15.4	Oregon	30.8	12.8
Nebraska	30.2	13.0	Washington	29.6	13.4
			U. S.	29.5	13.4

Source: Statistical Abstract of the United States, 1965, p. 22.

percent while the dependent age groups increased from 41.4 percent to 48.9 percent of the state's population. Furthermore, the state has continued to suffer additional out-migration of young workers during the period 1960 to 1965.

Out-Migration. In spite of a slight growth in the state's population, Wyoming has experienced a net out-migration during the last two and one-half decades.[6] Table VIII shows that the decades of 1940-1950 and 1950-1960 saw a loss through migration of 1,000 and 20,000 respectively, or 0.4 percent and 6.9 percent of the state's population. For the five-year period 1960 to 1965 the state lost 18,534 people, an outflow of 5.6 percent or 1.1 percent each year.

TABLE VIII
WYOMING NET OUT-MIGRATION

Year	Total Population at Beginning Census Year	Net Migration	
		Number	% of Beginning Census Population
1940 to 1950	250,742	- 1,000	0.4
1950 to 1960	290,529	-20,000	6.9
1960 to 1965*	330,066	-18,534	5.6

Source: Jack H. Gore, The Relative Economic Ability of Idaho, Montana, Nevada and Wyoming to Support Medical Education, prepared for Western Interstate Commission on Higher Education (Boulder, Colorado: Bureau of Economic Research, University of Colorado, 1964), p. 14. Computed from U. S. Census Bureau materials by taking the beginning census figure, adding births, subtracting deaths, and comparing the results with the end census year figure.

*Estimates for period 1960-1965 from Gandi R. Rajender, op. cit., p. 17.

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[6] Two major components of population change are natural increase and net migration. Natural increase represents the difference between the number of births and deaths. Net migration represents the difference between the number of persons migrating into an area and the number migrating from the area.

Of major importance is the fact that the net migration was largely concentrated in the productive age groups of 18 to 64, the age group that comprises the vast majority of the working force.[7]

A closer examination of this population loss indicates that the largest losses were in the 15 to 44 year age bracket, and more young men than women left the state. This out-migration of workers and their families in part reflects the results of the rapid changing technology in the state's economy and the very slow industrialization and urbanization. Unless present

TABLE IX
NET MIGRATION AND MIGRATION RATE
BY AGE AND SEX, 1950-60, WYOMING

Age 1960	Total	Total Male	Total Female	Migration Rate Percent Total	Migration Rate Percent Male	Migration Rate Percent Female
All ages	-19,671	-13,193	- 6,478	- 5.6	- 7.2	- 3.9
0-4	570	20	550	1.4	0.1	2.8
5-9	- 1,808	- 1,107	- 701	- 4.6	- 5.4	- 3.6
10-14	- 2,022	898	- 1,124	- 5.8	- 5.0	- 6.6
15-19	- 2,654	- 1,404	- 1,250	- 9.7	-10.1	- 9.3
20-24	- 2,397	- 1,527	- 870	-10.9	-13.8	- 8.0
25-29	- 1,358	- 1,790	432	- 6.1	-14.6	4.3
30-34	- 1,518	- 1,644	131	- 6.2	-12.3	1.2
35-39	- 1,517	- 916	- 601	- 6.3	- 7.4	- 5.1
40-44	- 1,675	- 8,866	- 809	- 7.5	- 7.5	- 7.4
45-49	- 1,122	- 753	- 369	- 5.5	- 7.0	- 3.8
50-54	- 915	- 468	- 447	- 5.2	- 5.0	- 5.5
55-59	- 974	- 563	- 411	- 6.7	- 7.3	- 6.0
60-64	- 735	- 244	- 491	- 5.9	- 3.7	- 8.2
65-69	- 1,040	- 619	- 421	- 9.4	-10.4	- 8.2
70-74	- 548	- 326	- 222	- 6.7	- 7.5	- 5.9
75+	12	- 102	114	0.1	- 2.4	2.8

Source: Economic Research Service, U. S. Department of Agriculture, Population - Migration Report, Vol. 1, Part 6, (May, 1965) p. 953.

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[7] Actuarial Report, Calendar Years 1950-1963: An Analysis of the Factors Affecting the Actuarial Position of the Wyoming Unemployment Fund, (Casper: Employment Security Commission of Wyoming, 1964) pp. 1-2.

trends are reversed, it is estimated that Wyoming will lose 28,100 persons between 1960 and 1970 through out-migration.[8]

Rural-Urban Migration. Wyoming also has experienced a dramatic shift in the geographical distribution of its people. Urbanization, which has transformed the nation, was slow coming to Wyoming. Not until 1960 did the Bureau of Census report that over 50 percent of the state's inhabitants reside in cities above 2,500 population. But in the decades since 1940 urbanization of the state gained momentum, and the trend to the city continues today. The rural-urban population distribution in Wyoming has gone from 37 percent urban in 1940 to 56 percent in 1960. By comparison, the United States moved from 56 percent urban in 1940 to approximately 70 percent in 1960.

The changing pattern of population in the state also can be seen from the fact that the 1960 census showed that Wyoming municipalities increased 25.4 percent during the 1950-1960 decade, whereas the state as a whole increased only 13.6 percent. Rural population actually declined during this period at a rate of approximately 1,000 people per year. Furthermore, larger towns grew more rapidly than smaller ones. Approximately 25 percent of all of the urban dwellers in 1960 lived in cities over 20,000 population--the largest cities in Wyoming--whereas in 1940 only 8.6 percent of Wyomingites lived in the larger cities. Two cities, Cheyenne and Casper, the state's two largest cities, accounted for 54 percent of the state population increase from 1940 to 1960.

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[8] Wyoming State Employment Security Council, Wyoming Labor Force Trends, Vol. 2, No. 1 (Jan., 1965), p. 1. The National Planning Association predicts a net out-migration from the state from 1960 to 1976 of 230 per thousand population. See Table III, p. 24.

The sparseness of the population in the state is accentuated by the rural-urban migration. In 1960 only six counties contained one or more cities with a population over 5,000; 13 counties contained less than 10,000 people; and four counties had less than 5,000 people. Nine of the 23 counties lost population during the 1950-1960 decade, while 14 counties showed population gains.[9] During the 1960-1965 period, the decline in many counties continued with 11 counties recording a loss in population and only 13 counties showing a gain in population (see Table X).[10]

The map shown as Figure 6 graphically illustrates the percentage of population change in Wyoming counties for the 1950-1960 decade. Of the 23 counties only five--Carbon, Fremont, Hot Springs, Natrona and Sublette--had an increase in population because of in-migration, while the remaining 18 counties had losses in population because of out-migration.[11] Of the 18 counties that had a net out-migration during the 1950-1960 decade, nine showed a population gain for the decade due to natural increases (see Table X). The other nine counties had a cumulative population loss of 9,802 during the decade.

In attempting to project needs and programs, it is important to know population trends. The University of Wyoming Bureau of Economic Research has completed a study updating the population of Wyoming counties to April, 1965. The study stated that the population of Wyoming as of April 1,

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[9] Population of Wyoming Counties for 1930, 1940, 1950, 1960, and 1965 is shown in Appendix Table II.

[10] Gandi R. Rajender, op. cit., p. 18.

[11] Net migration represents the difference between the number of persons migrating into a particular area and the number migrating from the area. Appendix A shows estimates of the components of change in the population by counties.

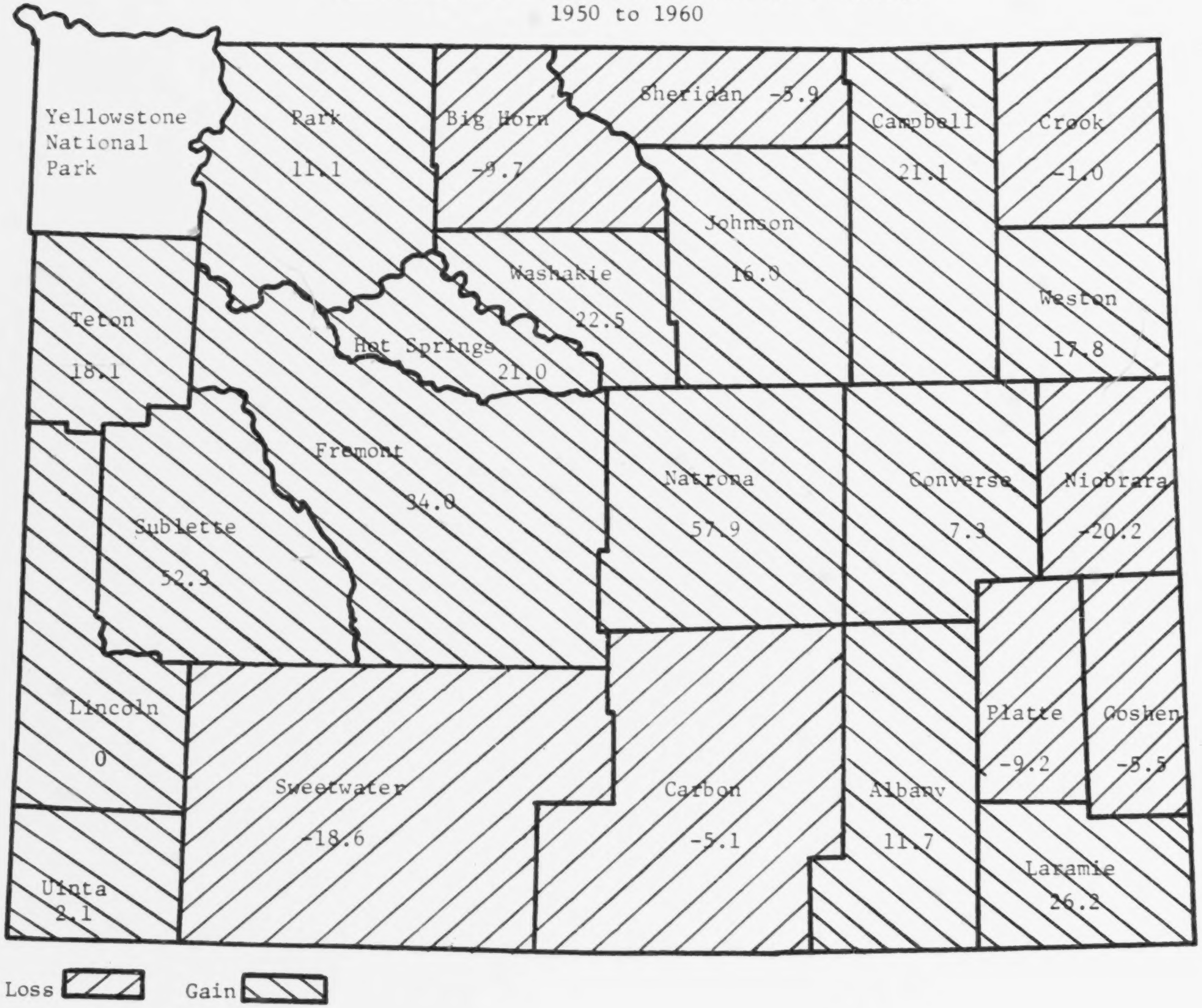
TABLE X

ESTIMATES OF THE COMPONENTS OF CHANGE IN THE RESIDENT POPULATION AND NET CIVILIAN MIGRATION, BY COUNTIES: 1950--1960

County	April 1, 1960 (census)	April 1, 1950 (census)	Net Change, 1950 to 1960		Components of Change, 1950 to 1960				Net Civilian Migration 1950 to 1960	
							Net Total Migration			
			Amount	Rate	Births	Deaths	Amount	Rate	Amount	Rate
WYOMING	330,066	290,529	+39,537	+13.6	83,999	24,752	-19,710	-6.8	-10,812	-3.8
Albany (1)	21,290	19,055	+2,235	+11.7	5,254	1,390	-1,629	-8.5	-1,204	-6.3
Big Horn (2)	11,898	13,176	-1,278	-9.7	3,432	1,055	-3,655	-27.7	-3,536	-26.8
Campbell (2)	5,861	4,839	+1,022	+21.1	1,305	462	+179	+3.7	+229	+4.7
Carbon (1)	14,937	15,742	-805	-5.1	4,013	1,393	-3,425	-21.8	-3,282	-20.9
Converse (2)	6,366	5,933	+433	+7.3	1,558	661	-464	-7.8	-423	-7.1
Crook (2)	4,691	4,738	-47	-1.0	1,041	375	-713	-15.0	-663	-14.0
Fremont (2)	26,168	19,580	+6,588	+33.6	6,114	1,944	+2,418	+12.3	+2,640	+13.5
Goshen (2)	11,941	12,634	-693	-5.5	2,925	1,010	-2,608	-20.6	-2,492	-19.7
Hot Springs (2)	6,365	5,250	+1,115	+21.2	1,586	638	+167	+3.2	+214	+4.1
Johnson (2)	5,475	4,707	+768	+16.3	1,313	509	-36	-0.8	+2	+0.0
Laramie (2)	60,149	47,662	+12,487	+26.2	15,952	3,419	-46	-0.1	+6,372	+16.2
Lincoln (1)	9,018	9,023	-5	-0.1	2,713	725	-1,993	-22.1	-1,923	-21.3
Natrona (1)	49,623	31,437	+18,186	+57.8	11,946	2,998	+9,238	+29.4	+9,582	+30.5
Niobrara (2)	3,750	4,701	-951	-20.2	969	421	-1,499	-31.9	-1,459	-31.0
Park (2)	16,874	15,182	+1,692	+11.1	4,495	1,112	-1,691	-11.1	-1,547	-10.2
Platte (2)	7,195	7,925	-730	-9.2	1,852	736	-1,846	-23.3	-1,783	-22.5
Sheridan (2)	18,989	20,185	-1,196	-5.9	4,072	2,034	-3,234	-16.0	-3,083	-15.3
Sublette (1)	3,778	2,481	+1,297	+52.3	761	197	+733	+29.5	+753	+30.4
Sweetwater (1)	17,920	22,017	-4,097	-18.6	4,981	1,775	-7,303	-33.2	-7,154	-32.5
Teton (1)	3,062	2,593	+469	+18.1	804	194	-141	-5.4	-115	-4.4
Uinta (1)	7,484	7,331	+153	+2.1	1,876	588	-1,135	-15.5	-1,072	-14.6
Washakie (2)	8,883	7,252	+1,631	+22.5	2,676	548	-497	-6.9	-413	-5.7
Weston (2)	7,929	6,733	+1,196	+17.8	2,351	551	-604	-9.0	-531	-7.9
Yellowstone Park (part) (1)	420	353	+67	+19.0	10	17	+74	+21.0	+76	+21.5

SOURCE: Actuarial Report, Calendar Years 1950-63, (Casper: Research and Analysis Section of the Employment Security Commission of Wyoming, August 1964), p. 5.

Figure 6
PERCENT CHANGE IN WYOMING POPULATION BY COUNTY
1950 to 1960


Yellowstone National Park
Park 11.1
Big Horn -9.7
Sheridan -5.9
Campbell 21.1
Crook -1.0
Teton 18.1
Hot Springs 21.0
Washakie 22.5
Johnson 16.0
Weston 17.8
Fremont 34.0
Natrona 57.9
Converse 7.3
Niobrara -20.2
Sublette 52.3
Lincoln 0
Sweetwater -18.6
Carbon -5.1
Albany 11.7
Platte -9.2
Goshen -5.5
Uinta 2.1
Laramie 26.2
Loss
Gain

1965, is approximately 338,570. This is an increase of 2.6 percent over the 1960 census figures. This is a low rate of increase when compared to the national rate of 7.8 percent in the same period. Reasons given for the slow growth are (1) a gradual decrease in the birth rate with a fairly constant death rate and (2) a large out-migration from most counties of the state. The lower birth rate is a national phenomenon, but is more pronounced in Wyoming than in the Rocky Mountain area or the United States generally. The most striking and perhaps disheartening feature about the population trend in Wyoming is that more people have been leaving the state than have been coming in. This preponderance in out-migration, which was so noticeable in the 1960 census, has increased. In the 10-year period from 1950 to 1960 the out-migration was 19,671, a rate of 5.6 percent, or .56 percent annually. For the five-year period from April 1, 1960, to March 31, 1965, the estimated number of people leaving Wyoming was 18,534, or an outflow of approximately 5.6 percent. This was a rate of 1.1 percent per year, or a rate approximately double that of the previous 10 years.

For the state only four counties had a net positive in-migration. These were Campbell, Fremont, Sublette, and Teton. Ten counties had an actual decrease in population. These were Big Horn, Carbon, Converse, Goshen, Niobrara, Park, Sheridan, Sweetwater, Uinta, Washakie and Weston. It is clear that an increased effort on the part of all the people in Wyoming will be necessary to change this picture.

The complete report as published by the Bureau of Economic Research is included in the Appendix for those individuals desiring a detailed description of the population changes. Table XI shows the population data for Wyoming counties from 1960 to 1965.

TABLE XI
POPULATION DATA FOR THE COUNTIES OF WYOMING
APRIL 1, 1960 to APRIL 1, 1965

County	Population 4/1/60	Births 4/1/60-3/31/65	Deaths 4/1/60-3/31/65	Natural Increase	% Natural Increase	Net Civilian Migration	% Net Migration	Actual Increase	% Actual Increase	Population 4/1/65
Albany	21,290	2,789	778	2,011	9.4	-1,406	- 6.6	3,181	14.9	24,470
Big Horn	11,898	1,204	585	619	5.2	- 724	- 6.1	- 276	- 2.3	11,620
Campbell	5,861	868	256	612	10.4	711	12.1	1,282	21.9	7,140
Carbon	14,937	1,580	645	935	6.3	-1,671	-11.2	845	- 5.7	14,090
Converse	6,366	683	309	374	5.9	- 496	- 7.8	- 210	- 3.3	6,160
Crook	4,691	583	205	378	8.1	- 18	- 0.4	327	7.0	5,020
Fremont	26,168	3,657	1,108	2,549	9.7	417	1.6	2,688	10.3	28,860
Goshen	11,941	1,191	581	610	5.1	- 790	- 6.6	- 330	- 2.8	11,610
Hot Springs	6,365	550	353	197	3.1	- 103	- 1.6	24	0.4	6,390
Johnson	5,475	538	278	260	4.7	- 172	- 3.1	34	0.6	5,510
Laramie	60,149	8,425	2,130	6,295	10.5	-4,362	- 7.3	3,416	5.7	63,570
Lincoln	9,018	1,161	387	774	8.6	- 445	- 4.9	237	2.6	9,260
Natrona	49,623	5,735	1,754	3,981	8.0	-3,320	- 6.7	279	0.6	49,900
Niobrara	3,750	370	213	157	4.2	- 152	- 4.1	- 26	- 0.7	3,720
Park	16,874	1,927	644	1,283	7.6	-1,201	- 7.1	- 106	- 0.6	16,770
Platte	7,195	701	393	308	4.3	- 169	- 2.3	28	0.4	7,220
Sheridan	18,989	1,600	1,153	447	2.4	- 428	- 2.3	- 236	- 1.2	18,740
Sublette	3,778	513	140	373	9.9	281	7.4	631	16.7	4,410
Sweetwater	17,920	2,088	855	1,233	6.9	-1,251	- 7.0	- 208	- 1.2	17,710
Teton	3,062	439	133	306	10.0	573	18.7	840	27.4	3,900
Uinta	7,484	754	330	424	5.7	- 437	- 5.8	- 82	- 1.1	7,400
Washakie	8,883	1,007	292	715	8.0	-1,856	-20.9	-1,229	-13.8	7,650
Weston	7,929	928	278	650	8.2	-1,515	-19.1	- 942	-11.9	6,990
Yellowstone P.	420	40	3	37	8.8	---	---	37	8.8	457
State	330,066	39,331	13,803	25,528	7.7	-18,534	- 5.6	8,514	2.6	338,570

Source: Gandi R. Rajender, "Population Estimates of Wyoming Counties--April 1, 1965," p. 18.

Educational policy in the state is complicated by these population changes; the sparseness of population, the long distances between towns, the migration from farms to towns, and the loss of population by out-migration, all present major problems to the educational system. Perhaps the most serious change is the net out-migration as it affects the economic well-being of the state and its ability to provide adequate public programs of all kinds.

Labor Force and Employment in Wyoming

The state's economy has been severely challenged by the changes in population. Children born in the period following World War II will be entering the labor force during the latter part of the 1960's. The labor force is already directly affected by the large increases among adolescents and young people. Many new workers are now entering and more will enter the labor force during the next 10 years. Unless Wyoming's economy expands to absorb these young workers, many will be forced to migrate to other sections of the country.

The scope of the employment challenge can be partially seen from the estimates that between 4,000 and 5,000 new jobs must be created each year in the state between 1960 and 1973 to employ the additional youth entering the labor force (see Table XII). The difficulty of this task is compounded by the drastic shifts in employment patterns in various segments of the state's economy. During the 1950-1960 period, Wyoming employment losses in four main divisions of the economy (farm employment, farm proprietorship, coal mining, and railroads) amounted to more than 14,000 persons. This represents nearly 13 percent of the employed persons in the state in 1950, and the same trends have continued during the 1960's.

TABLE XII
ESTIMATES OF POTENTIAL NEW JOB ENTRIES IN WYOMING: 1960-1973*

Year	Men			Women		
	Enter	Leave	Increase	Enter	Leave	Increase
1960	3,448	1,095	2,353	3,051	1,151	1,900
1961	3,463	1,587	1,876	3,528	1,256	2,272
1962	3,510	1,433	2,077	3,386	1,286	2,100
1963	3,592	1,511	2,081	3,344	1,316	2,028
1964	3,435	1,440	1,995	3,462	1,306	2,156
1965	3,824	1,552	2,272	3,572	1,344	2,228
1966	3,930	1,793	2,127	3,821	1,512	2,309
1967	4,194	1,636	2,558	3,887	1,566	2,321
1968	4,089	1,877	2,212	4,048	1,675	2,373
1969	4,015	1,661	2,354	4,037	1,531	2,506
1970	4,203	1,947	2,256	3,947	1,492	2,455
1971	4,084	2,032	2,052	3,877	1,836	2,041
1972	4,255	1,835	2,420	3,987	1,792	2,195
1973	4,172	2,043	2,129	4,039	1,929	2,110

*These computations are a straight line projection of the 1960 census data. Entry into labor force at age 18; leaving at age 65.

The pace of technological change is increasing, and even greater changes in Wyoming's economy can be safely predicted. To prevent greater out-migrations of its valuable manpower resources, the state must not only create new jobs to employ the increase of beginning workers, but must also generate enough economic growth to absorb those workers displaced by technological changes.[12]

Despite the dramatic shifts in employment in some segments of the state's economy, the growth of employment from 1950 to 1964 paralleled the growth of population and closely followed the patterns of the state's labor force. While the state's population increased from 292,529 to 338,570, or 13.1 percent, from 1950 to 1964, annual average employment grew from 113,950 to 135,270, an increase of 23,320, or 17.2 percent. The average labor force

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[12] Thomas S. Davis, *op. cit.*, pp. 13-16.

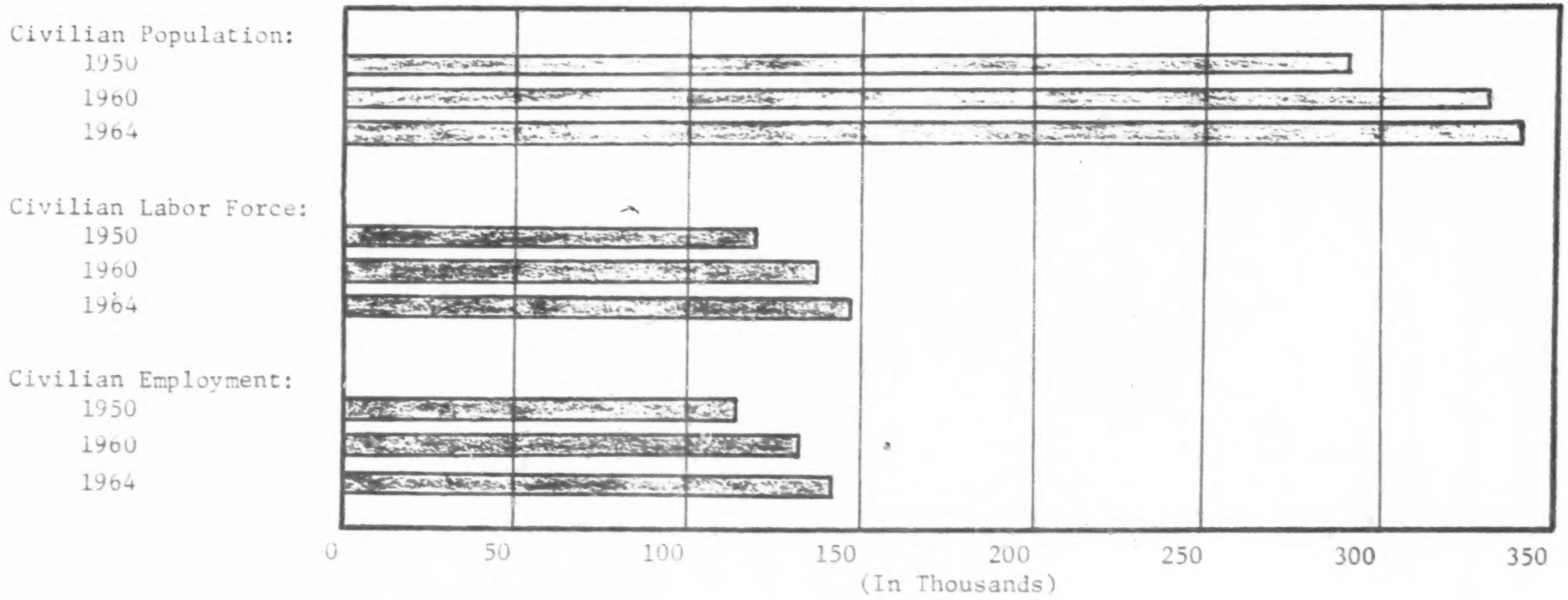
(the employed and unemployed) in this period increased from 119,500 to 141,980. Figure 7 compares the growth of the state's population, the labor force, and the amount of employment for the years 1940, 1950, and 1960.

Growth industries such as construction, manufacturing, and wholesale-retail trade industries, have grown fast enough to alleviate some of the employment losses caused by the technological changes. Figure 8 graphically illustrates some of the changes in the state's economy during the 1950-1960 decade. The greatest increases in employment, as can be seen in Figure 8, have been in construction, manufacturing, and the service industries. On the other hand, agriculture has had the largest loss in employment, and with further mechanization of farms, agriculture is expected to show continued decreases. Employment in mining remained about the same during the past decade despite the transformations in the coal industry. In part, this was due to the development of uranium, trona, iron, and petroleum mining. Technology is expected to continue reducing employment in the mining industry, and employment in this industry is not expected to increase greatly. Employment in the railroad industry will show similar trends as large decreases in railroad employment during the past decade are expected to continue as newer technology is introduced.

Despite the continued growth of employment in the state, unemployment stands in the forefront as Wyoming's major economic and social problem. From 1960 through 1964 the average unemployment rate has not been below 4.4 percent, and the average (mean) unemployment rate in the five-year period was 5.8 percent. Figure 9 shows the average unemployment rates from 1950 to 1964.

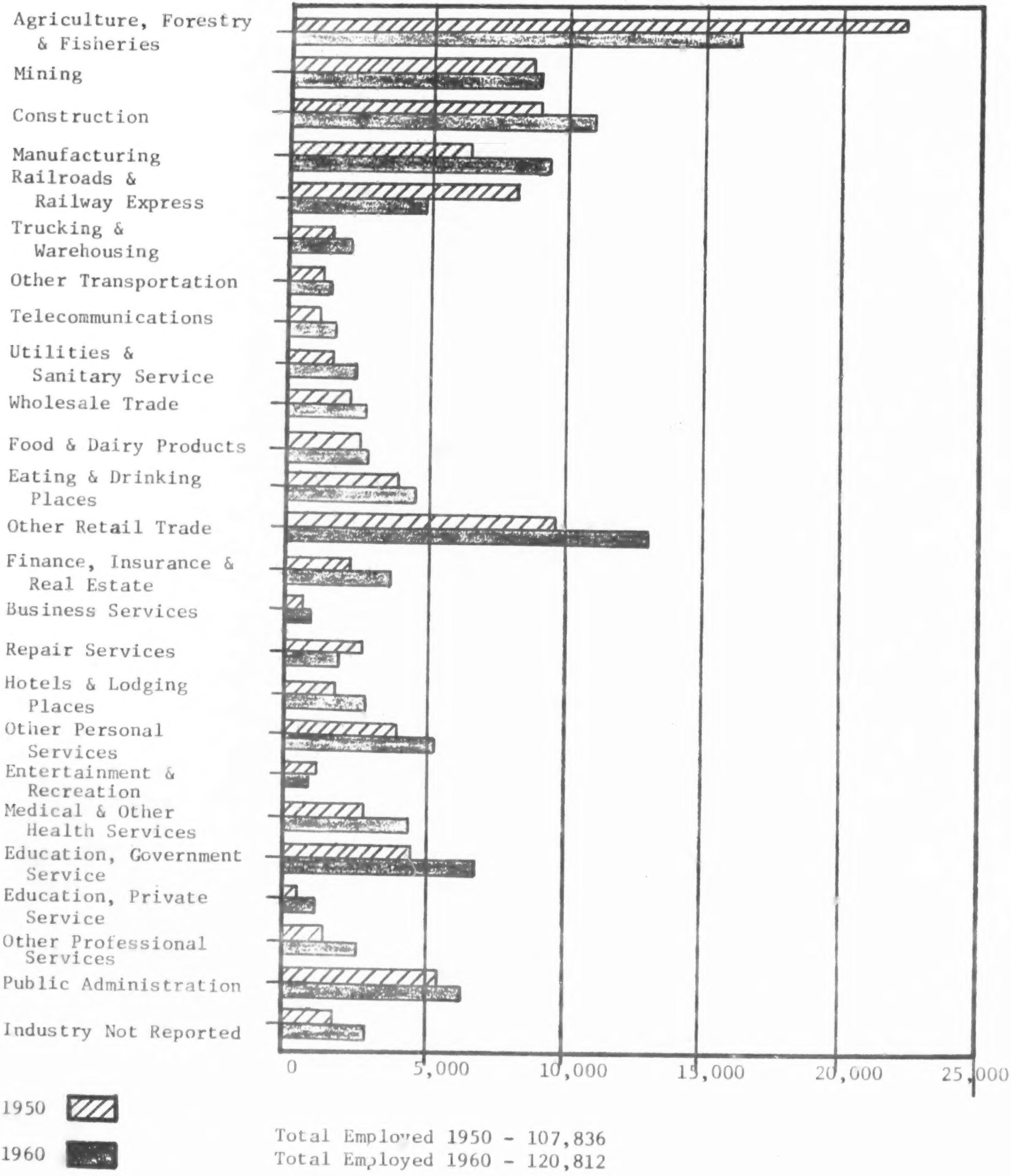
The economic problems of the state are also reflected in the growth of personal income in the state. In 1950 the total personal income was

Figure 7
POPULATION, CIVILIAN LABOR FORCE, AVERAGE ANNUAL EMPLOYMENT
AND AVERAGE ANNUAL UNEMPLOYMENT IN WYOMING
1950, 1960 and 1964



Source: Actuarial Report: An Analysis of Developments Affecting the Actuarial Position of the Wyoming Unemployment Compensation Fund, (Casper: Economic Security Commission of Wyoming, 1964), pp. 1-4; and Wyoming Work Force Estimates by County, Calendar Years 1963, 1964, (Casper: Employment Security Commission of Wyoming, 1965), pp. 1-2.

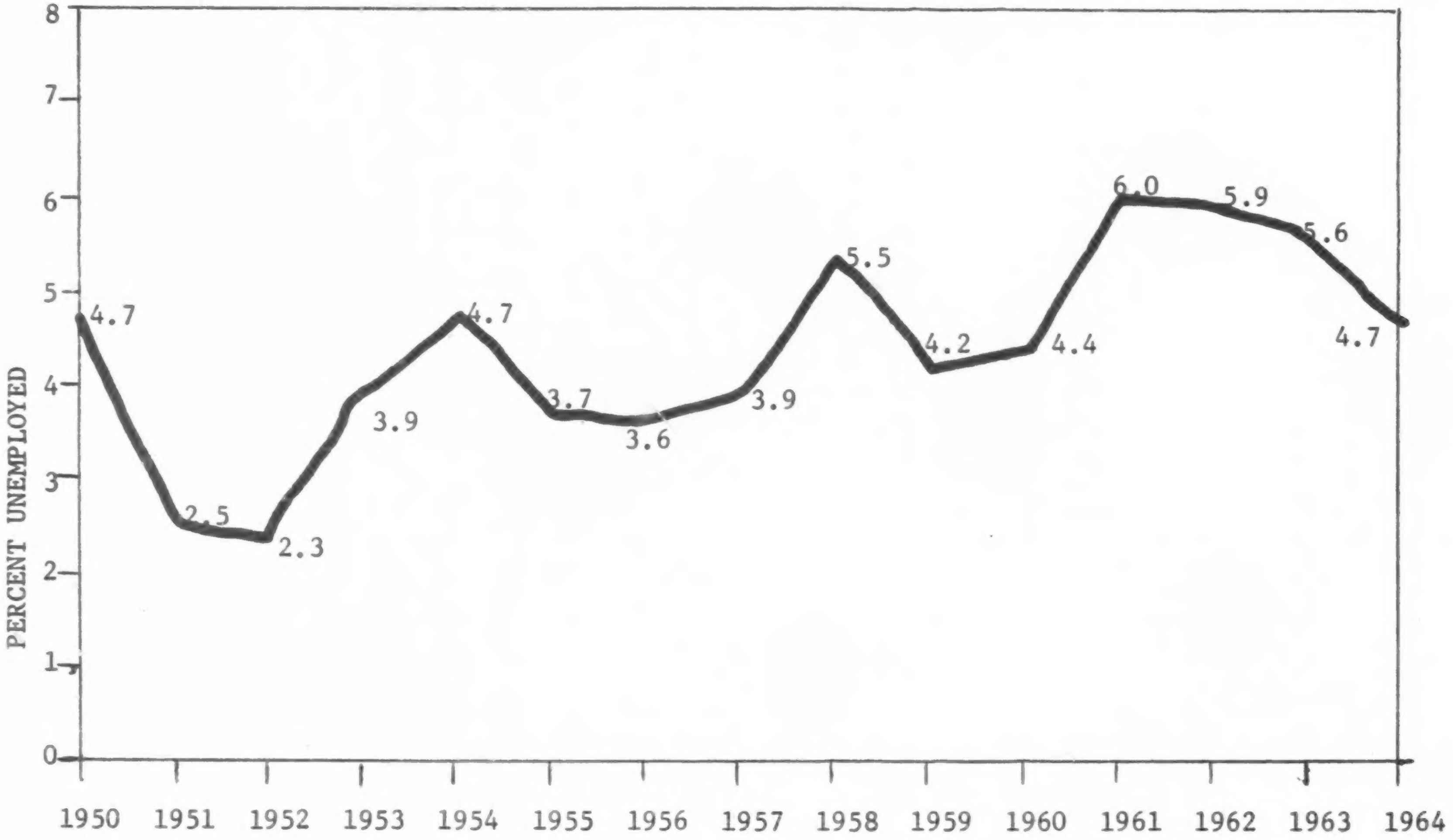
Figure 8
INDUSTRY GROUP OF THE EMPLOYED IN WYOMING
BY OCCUPATION, 1950 and 1960



Total Employed 1950 - 107,836
Total Employed 1960 - 120,812

Source: U. S. Bureau of Census, Population Census: Wyoming Detailed Characteristics of the Population, 1950 and 1960.

Figure 9
AVERAGE ANNUAL UNEMPLOYMENT RATE IN WYOMING
1950-1964*



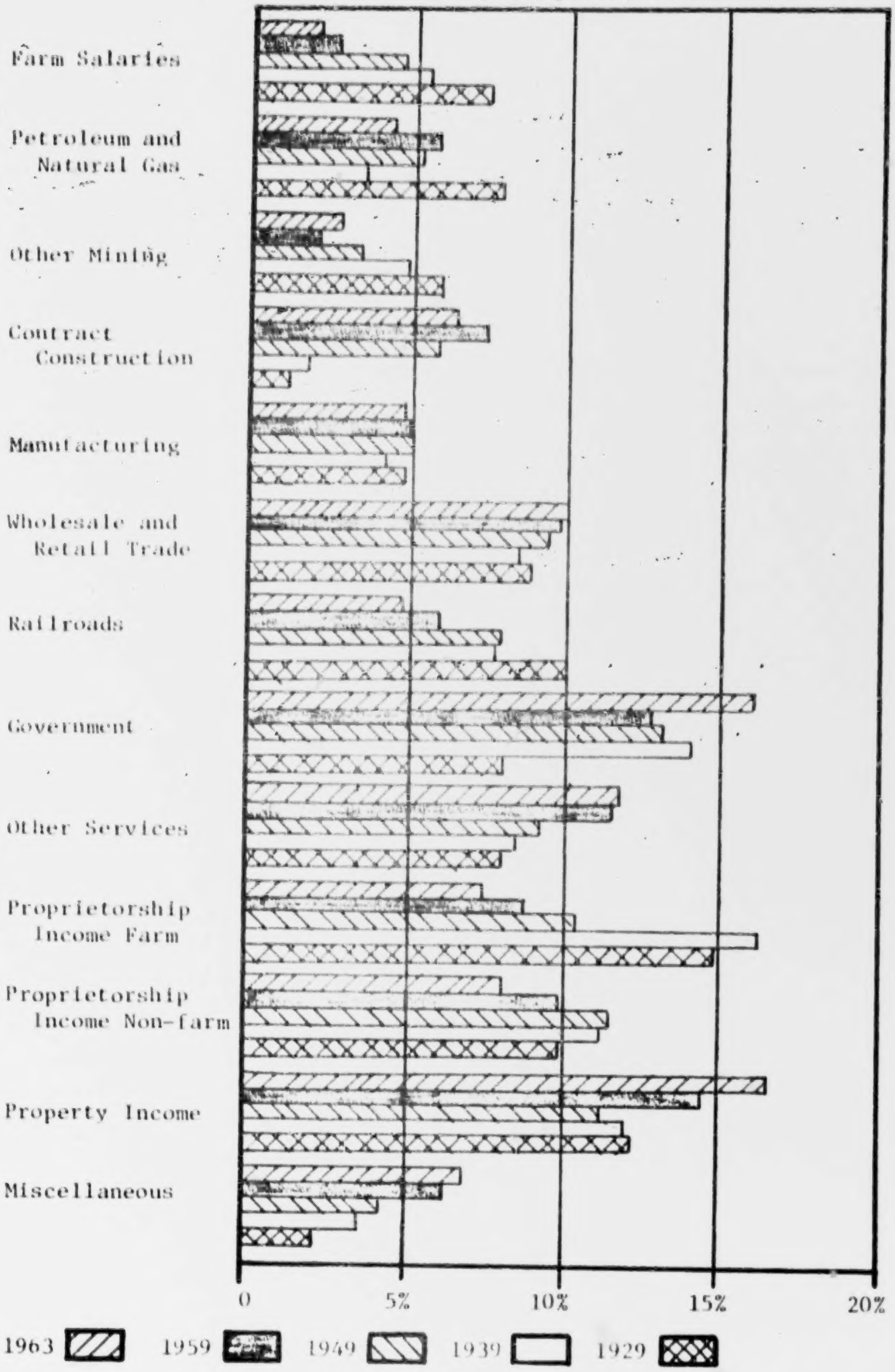
*Unemployment as a percentage of the Civilian Labor Force.

Source: Actuarial Report: An Analysis of Developments Affecting the Actuarial Position of the Wyoming Unemployment Compensation Fund, (Casper: Economic Security Commission of Wyoming, 1964), p. 10.

$474 million and increased to $775 million by 1960. This was an increase of 63.5 percent. Wyoming's rate of increase, however, was lower than the U. S. average of 77.8 percent. Per capita income for Wyoming residents increased $711 (43.8%), while the U. S. increased $732 (49.1%). In 1950 the per capita income in Wyoming was $1,623, and by 1960 it was $2,334. Wyoming has enjoyed a per capita income higher than the U. S. average for some time, but the relatively slow growth in recent years has made the advantage lower now than in the past. In 1950 we had a per capita income 8.9 percent higher than the national average, but by 1960 this had slipped to five percent.

With a growing population and labor force, the number of jobs necessary to achieve and maintain full employment grows each year. Obviously, this presents a serious challenge for greater economic development of the state, which in turn will require more and better education to raise the level of training and skills of the state's labor force. To increase the per capita income in Wyoming, it is going to be necessary to train people and to secure job opportunities for high paying occupations. The lowest wages are usually in the unskilled or labor jobs. These positions are on the decline, and a growing need in Wyoming for workers competent in skilled and semi-skilled jobs will require a re-evaluation of the types of education and opportunities we wish to train for in Wyoming. Real wealth today is in the economic well-being of all the people, and the drain of resources necessary to bolster even a small segment of our population to a minimum sustenance level will become greater if we do not cure the cause instead of treating the symptoms. Figure 10 shows the income level in Wyoming. Although we enjoy general prosperity and general employment, there are many in Wyoming without sufficient income or satisfactory jobs.

Figure 10
SOURCES OF PERSONAL INCOME BY PERCENT
WYOMING, 1929-1963



Source: Resources and Economy--Wyoming and its Counties, 1964, (Cheyenne: Wyoming Natural Resource Board, 1964), Table III, Section 24.

Technological Changes in Wyoming

Science and technology, as seen in Chapter I, have had startling and serious effects on many areas of our national life. Wyoming's economy also has been altered dramatically by the same forces of change. In some ways, because of the basic nature of our state's economy, we are probably leading the race of technological change, yet our economic problems are more difficult than those of other states. Agriculture, mining, and transportation, major segments of the state's economy, have all been seriously affected by technological innovations. This is reflected in the employment and the personal income generated in these industries. Figure 11 shows some of the changes occurring in the major economic activities in the state.

Agriculture. Agriculture in Wyoming historically has been one of the major economic activities in the state, and still roughly 14 percent of Wyoming's basic income is from agriculture.[13] Furthermore, ranching and farming have helped to mold the social and cultural patterns of our people, so the size and extent of the changes that are taking place and the effects of these changes are particularly significant to Wyomingites.

Wyoming's agricultural fortune is bound up intricately with the nation's agricultural conditions. Nationally, the U. S. Department of Labor had this to say about agriculture in its 1964 Manpower Report:

> The economic, technological, and social pressures which have pushed workers out of agriculture--and contributed to poverty in small towns which grew up to serve the people on nearby farms--are expected to continue, even though somewhat abated.
>
> Between 1960 and 1963 (three years) agricultural employment dropped by about three-quarters of a million, or 13½ percent.

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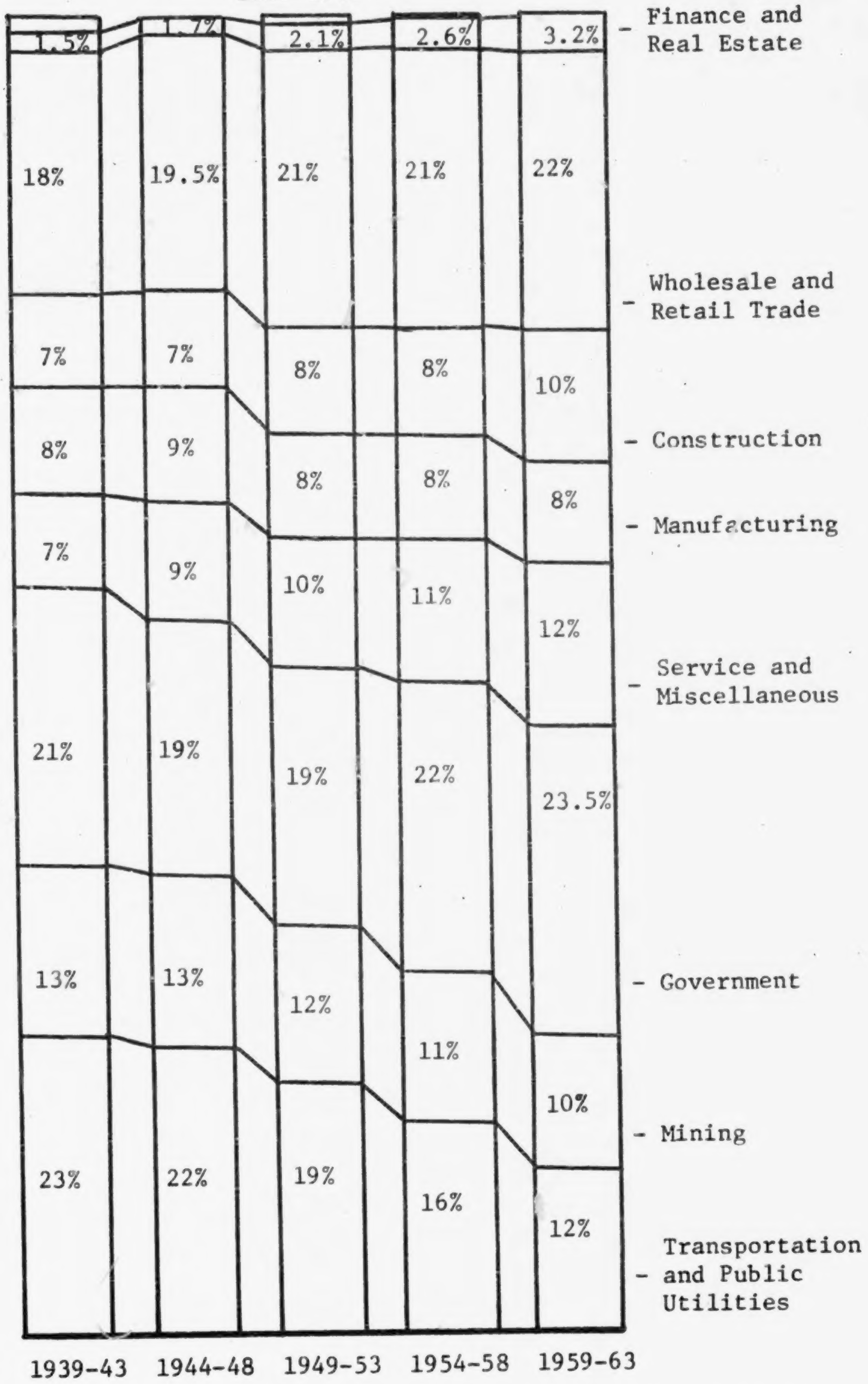
[13] Wyoming Agriculture: Economic Statistics of Wyoming's Agricultural Industry, (Laramie: University of Wyoming Division of Agricultural Economics, March, 1965) p. 17.

Figure 11
NON-AGRICULTURAL EMPLOYMENT DISTRIBUTION
1939-1963



Source: Employment and Earning Statistics for States and Areas, 1939-1963, U. S. Department of Labor, Bul. No. 1370-1, 1964.

> And projections by the U. S. Department of Agriculture and the U. S. Department of Labor indicate that the labor necessary to meet the domestic and export needs for food, feed and fiber will decline by 2 to 3 percent per year in the next several years. It is estimated that by 1975 less than 1 out of every 20 American workers will work on a farm, compared with 1 in 15 in 1963.
>
> The primary basis for anticipating a continued decrease in farm labor requirements is the prospect that output per farm worker will rise as farm machinery becomes even more efficient and other scientific and technological innovations are applied. Greater mechanization can be expected to partially offset the need for more hired farm workers. In addition, retirement and death will reduce the number of workers--27 percent of whom were 60 years old or over in 1960--and reinforce the trend toward large farms. Thus, the Department of Agriculture expects the decline in total farm man-hour requirements to continue, reaching about 52 percent of the 1950 level by 1968. The anticipated level would be almost 12 percent below that which prevailed in 1963.[14]

Wyoming's outlook is not significantly different; it is only on a reduced scale. Agricultural employment in the state has declined over the past 24 years from 30,882 farm workers in 1935 to 20,654 workers in 1959. From 1950 to 1960 alone, agriculture in Wyoming declined by 6,223 workers. This trend continues to the present time and appears to be headed for continuation into the future; there is no observable reason why there should be a cessation or reversal of the trend within the next five or 10 years.[15]

This picture of declining employment is interesting in view of the comparable worker-per-farm figure which is showing an opposite trend. In 1935 there were 1.8 workers per farm in Wyoming; in 1959 there were 2.4. The reason for this can be seen when the number of farms and the average size (in acres) of farms are considered. In 1935 there were 17,487 farms and ranches in Wyoming with an average size of 1,610 acres. In 1959 the number of units had declined to 9,744 with an average size of 3,715 acres.[16]

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[14] 1964 Manpower Report of the President, op. cit., pp. 89-90.

[15] Wyoming Agriculture, op. cit., p. 25.

Increased mechanization of agriculture has made it possible and profitable to farm larger units. There are more than 20 times as many tractors on Wyoming farms today as there were in 1920, and more than 27 times as many trucks. Mechanization has speeded the consolidation of holdings so that the number of ranches is getting smaller and the size of the ranches larger each year. This trend will undoubtedly continue. Table XIII shows that the average size of farms and ranches in Wyoming has increased from 1,866 acres in 1940 to 3,715 acres in 1959, and the trend toward larger units continues.

TABLE XIII
NUMBER, TOTAL ACREAGE AND AVERAGE SIZE
OF WYOMING FARMS AND RANCHES, 1870-1959*

Year	Number Farms and Ranches	Total Acres	Increase or Decrease (-) from Preceding Census	Average Size (Acres)
1870	175	4,341		25
1880	457	124,433	120,092	273
1890	3,125	1,830,432	1,705,999	586
1900	6,095	8,124,536	6,294,104	1,333
1910	10,987	8,543,010	418,474	778
1920	15,748	11,809,351	3,266,341	750
1925	15,512	18,663,308	6,853,957	1,203
1930	16,011	23,525,234	4,861,926	1,469
1935	17,487	28,161,911	4,636,677	1,610
1940	15,018	28,025,979	- 135,932	1,866
1945	13,076	33,116,554	5,090,575	2,533
1950	12,614	34,420,892	1,304,338	2,729
1954	11,402	34,989,064	568,172	3,069
1959	9,744 1/	36,199,666	1,210,602	3,715

*U. S. Census data.
1/ 253 farms were excluded by re-definition of farms for census purposes.
Source: Wyoming Agriculture, (Laramie: University of Wyoming, 1965) p. 24.

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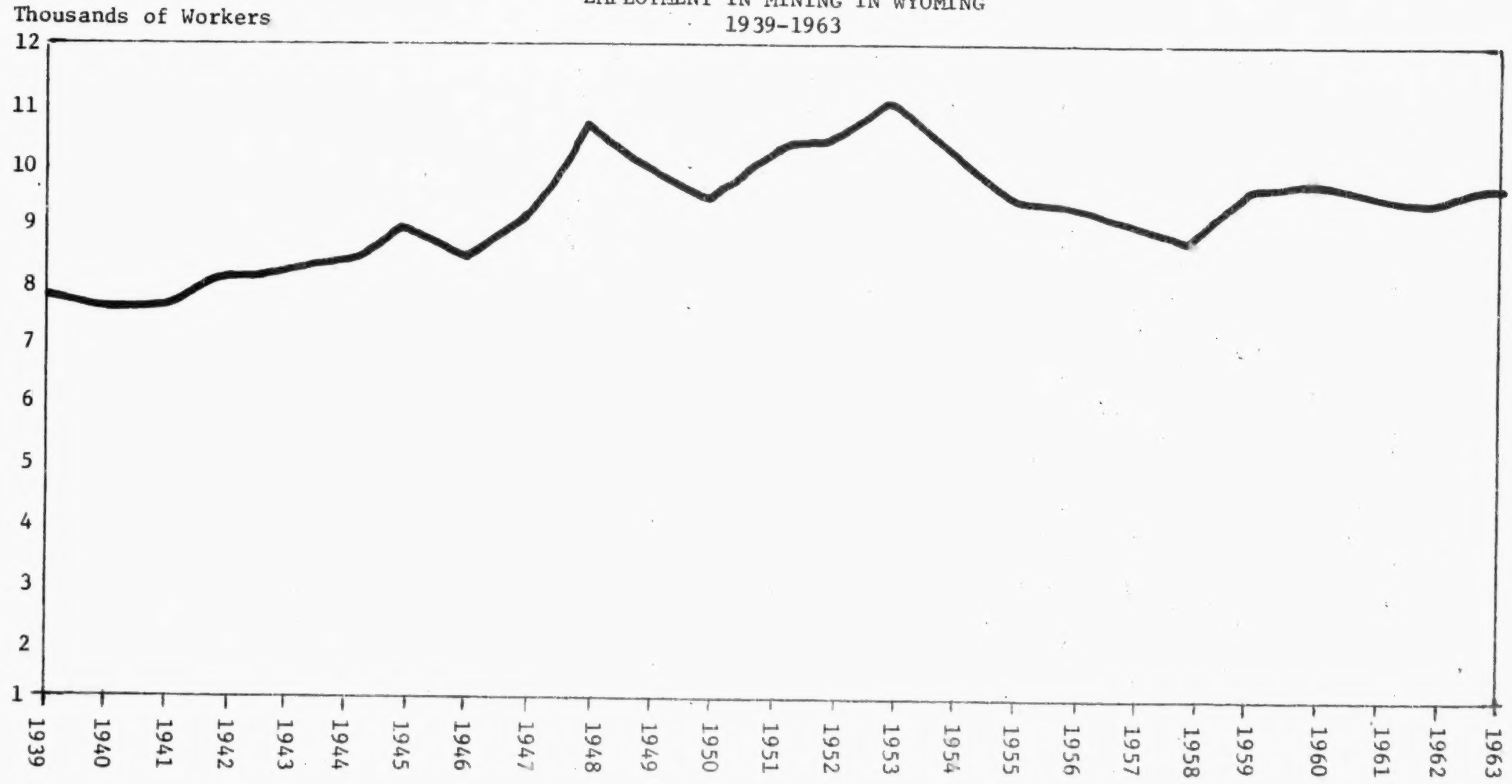
[16] Wyoming Agriculture, op. cit., p. 24.

The implications of the statistics are clear. Farm and ranch operators are expanding the size of their units, are employing more capital (machinery and equipment), hiring fewer people, and producing more agricultural output. The productivity of agriculture in the state has increased, and can be expected to continue increasing. Some additional acres in the state will be irrigated, and supplemental water will make others useful. Increased use of fertilizers will help also. Since livestock provides the bulk of income, developments which do not change livestock production will have a proportionally smaller impact. As more technological and scientific innovations are applied to agriculture, the trend toward more production with fewer people can only continue.

Mining and Mineral Production. Mining has been a major economic activity in Wyoming throughout much of its history. From 1939 to 1963 mining employed between 10 to 13 percent of all non-agricultural workers in the state. In recent years, however, the percentage of workers has declined. In the period 1958-1963 miners comprised approximately 10 percent of the state's non-agricultural employment, and around eight percent of personal income in the state was from mining. Figures 10 and 11 show the percentage of personal income from mining and the percentage of non-agricultural employment in mining.

Technological developments and change in coal consumption have caused major adjustments in the mining industry since World War II. In the 1950's total employment in the coal mines declined precipitously. Figure 12 shows the employment in mining in the State of Wyoming from 1939 to 1963. The decline of the 1950's was the result of a decrease in underground coal mining activity caused by a shift of railroad motive power from steam locomotives to locomotives driven by other kinds of

Figure 12
EMPLOYMENT IN MINING IN WYOMING
1939-1963



Source: U. S. Department of Labor, Bul. No. 1370-1, 1964, Table #2.

fuel, and by the greater acceptance of other fuels for home heating. Since that time an increase in open pit mining of coal to be used in the generation of electrical power has changed the production figure. However, recent coal mining activity has been highly mechanized, and employment has remained quite small in relation to production.

Continued advances in mechanization of the coal industry point to a continued decline in labor requirements per ton. Bureau of Mines experts expect that by 1970 the number of coal mines may be reduced drastically. Prospects for increased coal sales, however, are improving, reflecting, in part, reductions in transportation costs. Despite production gains, employment is expected to continue to decline, but somewhat less rapidly than in recent years.[17]

As employment in coal mining has decreased, the discovery of other minerals and the development of new technology have helped the mining industry in the state's economy. Uranium was discovered in Wyoming in the early 1950's, and it has given a tremendous boost to the mining industry since this period.[18] This industry, however, is largely dependent upon government contracts and upon the national defense needs of the country. During the 1960's we have witnessed a cutback in the production of uranium, and unless the defense picture changes drastically or electrical production from uranium expands greatly, employment in this industry is not expected to increase significantly.[19]

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[17] Technological Trends in 36 Major American Industries: A Study Prepared for the President's Committee on Labor Management Policy (Washington, D. C., U. S. Department of Labor, 1965), p. 6.

[18] F. K. Harmston, "Uranium, Wyoming's Miracle Industry," Wyoming Trade Winds, Division of Business and Economic Research, University of Wyoming, II (August, 1957), pp. 5-7.

Trona, a soda ash used primarily in glass making and in the chemical industries, is another mineral which has been developed in Wyoming since the 1950's. In 1951, when the first trona mining operation was started near Green River by the Intermountain Chemical Company, there were about 100 workers, and the payroll was under 0.5 million dollars. By 1960 over 500 people were employed, and the payroll was over three million dollars. By 1965 this industry had grown to a 3.3 million dollar industry and employed 850 employees.[20]

The development of trona mining has helped to absorb many of the miners displaced by the closing of coal mines. The uses of this product are expanding, and employment in this area of the mining industry is expected to increase.[21]

The development of U. S. Steel's Atlantic City Iron Ore Mine at South Pass is another new mining industry in the state. Ore mined at South Pass is shipped for smelting to the company's integrated steel making operations located at Provo, Utah, some 355 miles from the mine's site. Automated equipment to mine and transport the ore to the steel mills in Utah makes this operation possible.

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[19] An Appraisal of Wyoming's Present Economic Development (Cheyenne, Wyoming, Natural Resources Board, 1962), p. 31.

[20] William N. McLeod, "Westvaco Soda Ash," Wyoming Trade Winds, Division of Business and Economic Research, University of Wyoming, II (March, 1958) pp. 11-17.

[21] O. D. Turner, Resources of Wyoming and Their Relation to Industrial Development (Laramie: Division of Business and Economic Research, University of Wyoming, 1959), pp. 160-162. cf. F. K. Harmston, "The Wyoming Economy, 1962," Proceedings of the First Wyoming Clerks' and Finance Officers' School (Laramie, Division of Adult Education and Community Service, University of Wyoming, 1962), p. 19.

The further potentials for smelting of iron ore in Wyoming, according to the Armour Research Foundation study, seem to hold some promise. Expected technological developments in the steel industry, such as the development of synthetic cokes and the use of oxygen in the reduction process, should contribute to greater mobility of the steel industry and help Wyoming to obtain this industry.[22]

The oil and gas industry in Wyoming has been particularly dynamic during the post-war period. Prior to 1942 pipeline facilities were limited, and markets for Wyoming oil and gas were poor. Since then the state has been covered by networks of crude oil pipelines to take both asphalt base and green oils; prices have been good, and the industry has prospered.

Wyoming has substantial oil reserves, and only six states rank ahead of Wyoming in petroleum production by volume. Petroleum and natural gas have accounted for between 7.9 percent and 4.3 percent of the personal income in the State of Wyoming since 1929. The percentage of personal income derived from the petroleum and natural gas industry has declined, however, in recent years, and in 1963 produced 4.3 percent of the personal income in the state, as compared with 7.9 percent of the state's income in 1929 (see Figure 10). Despite the percentage decline, actual value of petroleum and gas production has increased from $10,826,081.00 in 1935 to $347,737,176.00 in 1965.

The petroleum industry has also employed sizeable numbers of the non-agricultural labor force in the state. Figure 13 shows that all petroleum industries, including crude petroleum and natural gas and petroleum refining and related industries, reached a peak of employment nationally in the year

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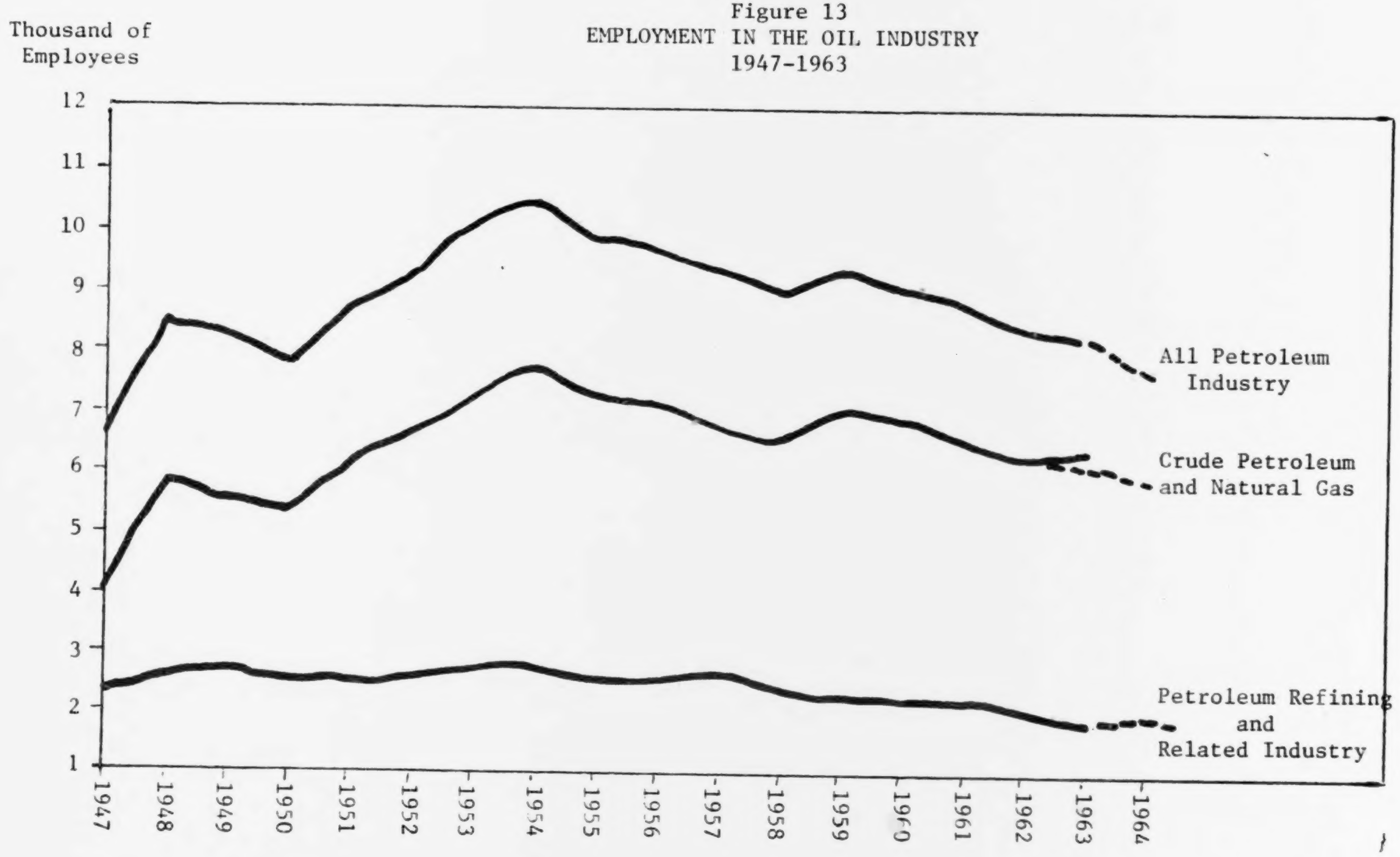
[22] An Appraisal of Wyoming's Present Economic Development, op. cit., pp. 28-29.

Figure 13
EMPLOYMENT IN THE OIL INDUSTRY
1947-1963



Source: U. S. Department of Labor, Bul. No. 1370-1, 1964, pp. 676-677.

Note: Total petroleum employment figures may not be entirely accurate because of overlap due to adding the two smaller figures together.

1954, and since then employment in these industries has declined. In part, this is due to greater automation in the oil industry, as the crude petroleum and natural gas production has increased in each of these years. Recent changes in the industry and continued installation of automatic equipment have increased the productivity of the petroleum-gas industry, making it possible to produce larger amounts of these resources with fewer employees.[23]

Technology is a major factor in the development of the crude oil and natural gas industries. Major developments affecting discovery, drilling, and production of oil and gas include improvements in instrumentation and increased application of computers and automatic control. Improvements in discovery techniques utilize electrical, gravimetric, magnetic, and seismometric methods. Use of computers in discovery for processing geophysical data has been increased, and the trend has been toward deeper drilling. Oil production also is being increasingly automated by means of a method called Lease Automatic Custody Transfer (LACT). With LACT the operation of wells, storage tanks, and field pipelines can be automatically monitored and controlled, and data can be accumulated and processed at a central point. Wyoming fields now are feeling the influence of these innovations.

Technology in the gas processing and oil recovery areas has been equally great. Additions to natural gas processing capacity have been greater instrumentation, more automatic remote operations, and increased use of refrigerator absorber units. New materials and methods are being used for wells stimulation and secondary recovery to achieve greater yields.

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[23] R. W. Rausch, "Automation in the Petroleum Industry," Wyoming Trade Winds, Division of Business and Economic Research, University of Wyoming (June, 1962), p. 16.

Nationally, the total number of employees in all aspects of the crude oil and natural gas industry has declined in recent years, and is expected to continue to decline as greater mechanization and automation are installed.[24] Figure 14 shows the national picture on the crude oil and natural gas industry. It can safely be assumed that the picture will be similar in Wyoming with increased production but fewer workers.

In addition to its petroleum resources, the state has considerable deposits of oil shale which may be exploited in future years as research in processing oil shale continues. Prospects for large commercial developments of oil from oil shale are somewhat remote at the present time, however, since liquid fuels from shale cost 10 to 20 percent more than liquid fuels from conventional sources. As scientific and technological breakthroughs occur in this field, however, this will become another major resource of the State of Wyoming.[25]

Wyoming's natural mineral resources are obviously a key to industrial development to the state. Science and technology have had the effect not only of developing new resources (e.g. uranium, trona, bentonite, gypsum, etc.), but have made it possible to extract these resources with fewer and fewer workers. It can be expected that the extraction process will continue to be mechanized, with increasing productivity and fewer employees needed. Therefore, if the state is to benefit from these resources it is important that it develops the industrial ability to process these resources. Again, technology and science will direct this development.

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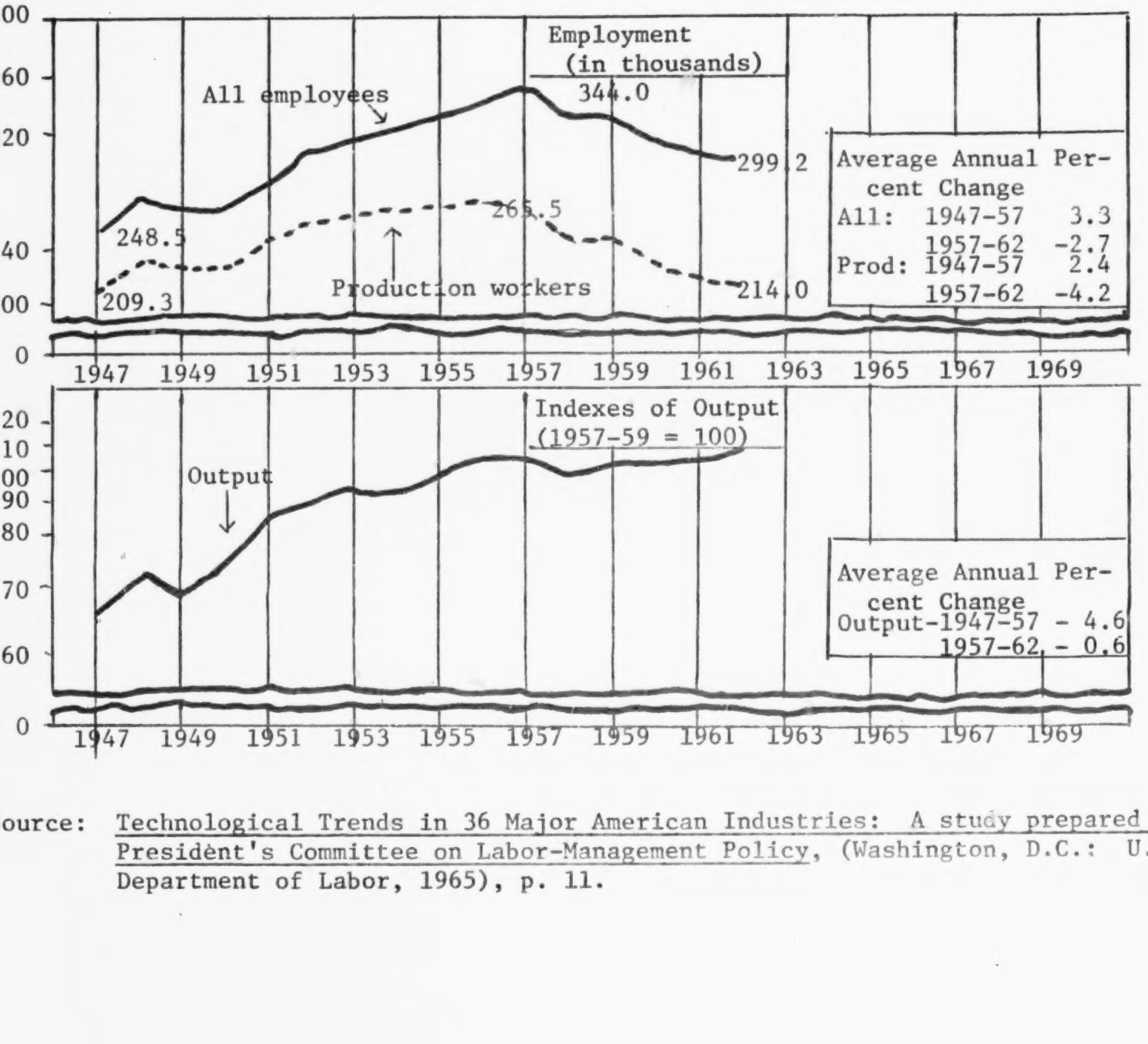
[24] Technological Trends in 36 Major American Industries, op. cit., pp. 10-11.

[25] An Appraisal of Wyoming's Present Economic Development, op. cit., p. 27.

Figure 14
CRUDE OIL AND NATURAL GAS



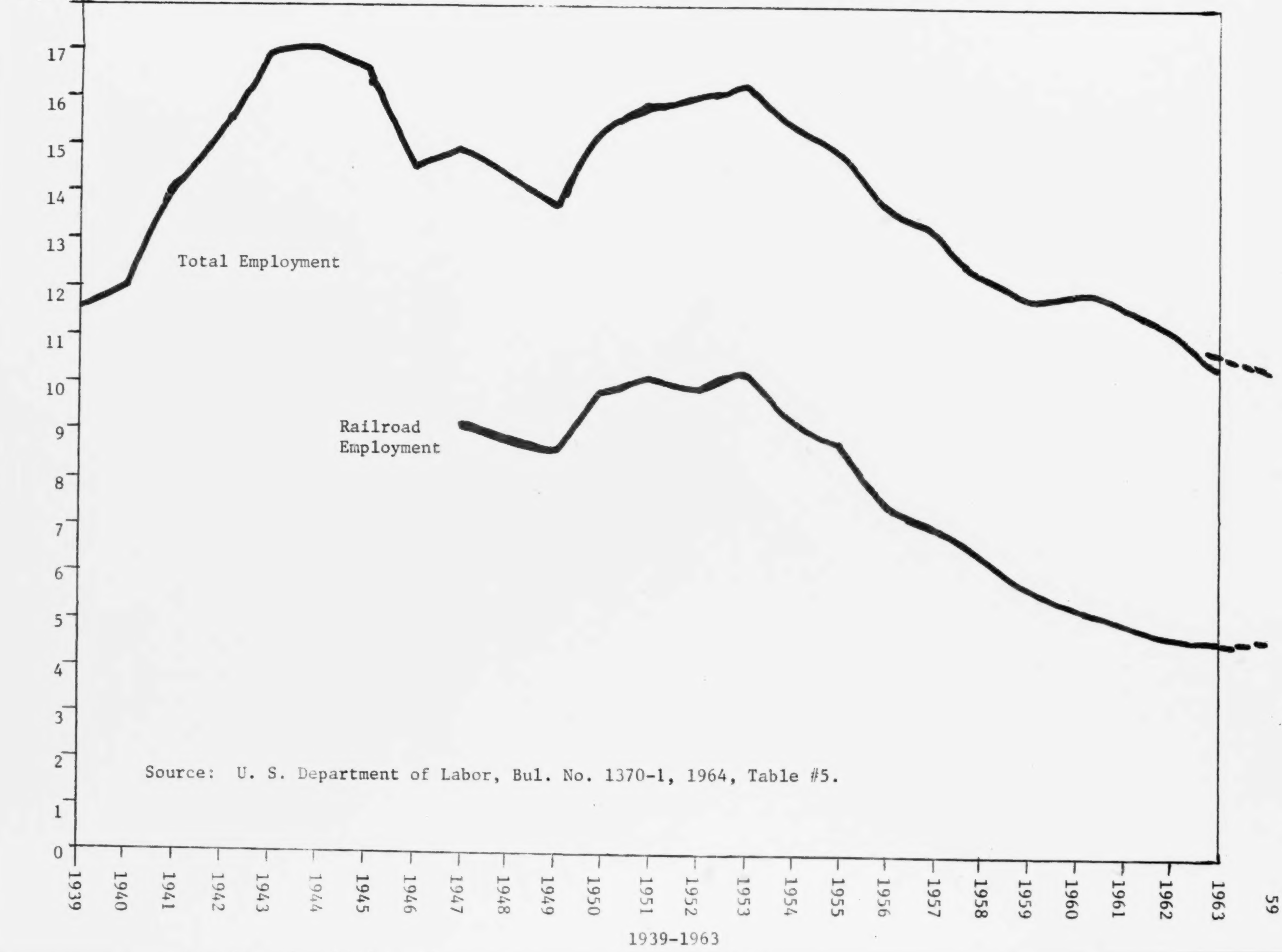
Source: Technological Trends in 36 Major American Industries: A study prepared for the President's Committee on Labor-Management Policy, (Washington, D.C.: U. S. Department of Labor, 1965), p. 11.

Transportation and Public Utilities. Transportation and public utilities, considered together, have long played a major part in Wyoming's economy. The railroad industry particularly has been a mainstay in the state's economy in the number of people employed, payroll contributions to total personal income, and contribution to the tax base of the state. Since World War II this industry has been drastically changed through the application of science and technology. Many improvements in the railroad industry have increased its ability to compete with other forms of transportation. New diesel-electric locomotives, greater hauling capacity, lower fuel and maintenance costs, the unitized coal train, centralized traffic control, electronic classification yards, improved signaling and communication systems, and piggy-back services are all examples of the technological improvements in equipment and facilities.

These innovations have increased the productivity of the railroad industry, and employment has declined throughout the nation and in the State of Wyoming likewise. For example, employment by railroads in Wyoming declined 55 percent from a high of 10,100 in 1953 to 4,500 in 1963. Figure 15 shows this tremendous decline in employment as a percentage of the non-agricultural employment of the state.

The outlook for the railroad industry is one of continued increase in productivity as advancing technology is applied to this industry. Railroad employment is likely to continue its long decline, although at a slower rate than since World War II. Railroads will encounter persistent competition for passengers as improvements in our highway systems encourage a further shift of intercity travel by private automobile, and as airplane travel registers additional gains. On the other hand, movement of freight by railroad as well as other public and private carriers, will increase with

Figure 15
EMPLOYMENT IN TRANSPORTATION AND PUBLIC UTILITIES



Source: U. S. Department of Labor, Bul. No. 1370-1, 1964, Table #5.

higher levels of industrial capacity even though the railroads' share of total intercity and interstate freight traffic may continue to diminish; rising railroad freight business could slow the employment decline anticipated in the industry during the 1960-1975 period.[26]

In contrast, in air transportation and in trucking and warehousing, continued increases in employment are in prospect. Nationally, it is predicted that employment in trucking and warehousing will rise as a result of increased industrial activity, continued decentralization of industry, and movement of population to the suburbs. Among the factors which will contribute to increased air travel and greater airline employment are a larger population, increased consumer purchasing power, the trend towards more frequent and longer vacations, the greater dependency upon air travel by businessmen, and the extension of low cost air coach service.

Wyoming should benefit from these developments, particularly in the trucking industry since the state acts as a bridge between the industrial sections of the East, the Midwest, and the Far West. Similarly, air travel should increase as the state's population continues to grow and this mode of transportation becomes more popular.

Electric power production is another utility which has played an increasing roll in the state's economy. Electrical power consumption in the Rocky Mountain area has grown rapidly since 1950, and Wyoming's growth has featured prominently in this story with the construction of two coal-fired steam generating plants and a third in the planning stage. In 1950 Wyoming had an installed generating capacity of 139,000 kilowatts. By 1963 this had jumped to a remarkable figure of 683,000 kilowatts, an increase of

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[26] 1963 Manpower Report of the President, op. cit., p. 96.

391 percent. During a like period energy production has grown by 526 percent, from 346,096,172 kilowatt hours in 1953 to 2,167,723,732 kilowatt hours in 1965. Employment in this industry has also grown. In 1965 the peak employment quarter for the year showed a total of 902 employees.

Since Wyoming has tremendous energy resources (coal, oil and gas) it can reasonably be expected that in the future the state will produce more and more electrical power to serve the growing West. Technology will continue to affect the productivity of the electrical industry, and its employment will not increase as rapidly as its output. The outlook for the electrical power industry is for the building of larger generating plants, the extension of inner connections, and the use of computers in automatic dispatch systems, power plant, and office operations. Declining labor requirements for the production of electricity are likely to be offset by the high rate of output and the extensive construction activities. Production of electrical power is expected to show significant gains over the next decade. Employment, however, is expected to remain stable or even decline slightly.[27]

Communication Industry. The communication industry (telephone, radio and television stations, the newspapers, and the telegraph company) is another public utility in the Wyoming industrial family that is producing an impact on the employment situation of the state.

Operations of the telephone industry have shown a gradual and continual increase since the first telephone was introduced into the state. However, after World War II, growth was particularly impressive. In 1945 there was a total of 39,424 telephones in Wyoming. During the 13-year period to follow, 67,576 more telephones were added, bringing the total to 108,000 at the end of 1958.[28] By 1963 this had grown to 150,000 telephones.

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[27] Technological Trends in 36 Major American Industries, op. cit., p. 88.

The general introduction of dial telephone equipment and direct distance dialing (DDD) equipment has reduced the need for telephone operators in most of Wyoming's communities. One example is the recently announced conversion of the telephone exchange in Lusk from one requiring operators to a new dial system utilizing touch-tone calling. It was also announced that the new move would reduce the number of personnel working for the Mountain States Telephone Company in Lusk from the present 19 to four after the conversion. By the end of the decade virtually all telephones in the state will be dial operated. However, the mechanical and electronic sophistication of the equipment has increased the need for employees in installation and maintenance work. Technically trained employees of this type will continue to be needed, and there appears to be no let-up in this demand.

Between the census years of 1950 and 1960 the numbers of people listing their occupation as telephone operator declined by 116 people from 793 in 1950 to 677 in 1960. There has probably been a much sharper decline in the number of operators in the five years since the 1960 census because it was during that period that we had the highest level of activity directed toward switching telephones to complete dial operation.

The telegraph industry has experienced a declining employment trend. The introduction of high speed printing equipment, teletype equipment, and other innovations designed to expedite the handling of message traffic has contributed to this declining employment trend.

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[28] Jack G. Berry, "Wyoming, the Telephone Industry," Wyoming Trade Winds, Division of Business and Economic Research, University of Wyoming, IV (September, 1959), p. 10.

There has been a considerable increase in the number of radio and television broadcasting stations in the state since the end of World War II. Prior to the war there were only a few stations in operation in the state. In 1963 there were 33 commercial AM, FM, and TV stations on the air. This has undoubtedly provided employment for many station managers, announcers, advertising salesmen, and radio technicians in the past 15 years.

In the newspaper industry there has been, nationally, a growth in employment and the total numbers employed. Without question, Wyoming has shared in this increase in employment, even though there has been a reduction in the number of newspapers printed in the state over the past 30 years.

Construction. The tremendous increase of interstate highway construction and other government construction projects in this state has caused this segment of the economy to assume a much more important role than it played 20 years ago. The new types of heavy equipment used in road construction vividly illustrate the technological changes that have occurred in recent years. Not only do these machines do the work of many men, they require specially trained operators to handle them.

At the present, the future of this industry is dependent, to a large degree, upon the future actions of Congress with regard to the interstate highway program and construction activity connected therewith.

Government. The employment increase in this area has been substantial. All three levels of government--local, state, and national--have increased their activity and the scope of their operations in Wyoming. However, state and local governments have been by far the most active and have accounted for most of the increased employment. While federal government employment in Wyoming in 1963 had increased only slightly over the 1949 level, state and local government employment had increased approximately 80 percent over the 1949 figure. This trend appears to be continuing and will probably result in many more governmental employees, federal, state, and local, in the coming years.

Some Implications of Technological Change

Technological innovations, as can be seen from the preceding discussion, have had a major impact upon Wyoming's economy since World War II. Widespread public concern has been evoked over the effect of automation on employment opportunities. This concern is occasioned by knowledge of the employment cutbacks which have attended the change-over to automation in some industries and by frequent reports of new and improved devices which could be substituted for human labor in ever-widening areas of activity. Yet, automation is generating jobs as well as eliminating them--in part through direct creation of new jobs, in part through stimulation of economic growth. It can be convincingly argued that according to the record of economic history, the long-run effect of technological advance has so far been to increase employment as well as to raise per capita income and to remove much of the drudgery from the work. The most recent phase of technological progress may well have similarly favorable long-run consequence.

The trends of employment have serious implications regarding the necessary level of education preparation and training and the needed skill level of people seeking employment in Wyoming. Declining employment is in itself a serious problem. When coupled with a changing character of the nature of the work within certain occupations, it has serious implications concerning preparation or re-preparation of workers for employment. It also has serious implications for the educational system of the state.

The days of the uneducated laborer with a "strong back and a weak mind" are gone; the era of the highly trained, highly educated technician responsible for the proper operation of expensive machinery and equipment or for overseeing the correct operation of technical and scientific production processes, is now here. Whether we like it or not, we are now in a new age, and we must prepare ourselves to meet this new age and become a part of it or be left behind to become a part of the growing problem and the mounting burdens facing our society within the next decade.

The changing nature of our economic structure calls for training of a different order from that which has been deemed sufficient in the past. For generations our agricultural economy and rural society supported a labor force that had only limited educational opportunities and accomplishments. Dedication to hard work and an unshakeable faith in the future served the majority of our forefathers well in their struggle for success when a college degree was a rarity.

The increasing complexity of our science-technology dominated society now demands increasing divisions of labor and the development of specialities that require more and more precise preparation and training. Agriculture, as well as the non-agricultural occupations, now is scientifically oriented and requires skilled personnel in most of its operations. Unskilled and semi-skilled laborers, who for years constituted an important economic element in the state, today find their vocational opportunities extremely limited.

A study of the occupational distribution of the labor force permits a rough measure of the worker's skills and training, and this, of course, in considerable part measures his ability to earn income. The change in skills of the labor force in Wyoming for recent decades is indicated by Figure 16. This shows the changes in percentage of workers in various occupational classifications between 1940 and 1960.[29] As revealed here, Wyoming's experience is comparable to the trend in the United States and in the Rocky Mountain States generally. The greatest increases during the 20-year period have been in those occupations which require extensive education and training, i.e., professional and technical workers, proprietors, craftsmen, clerical workers, and service workers. On the other hand, the jobs requiring less education and training have declined considerably during this period.

As the technical and economic demands of our economy accelerate, even more significant changes are expected in employment among various occupations. Advancing technology will expand the number of professional and technical jobs. The number of managerial, sales, and clerical jobs is expected to increase substantially because of greater business planning and mass marketing. Employment in the service industries will rise significantly as the tourist industry expands. On the other hand, the number of agricultural and unskilled jobs is expected to continue to decline or at the best remain stationary.

Study of the Wyoming Labor Department's labor force projections (Figure 17) details these projected changes. Professional and managerial positions, it is estimated, will comprise up to 25 percent of total employment

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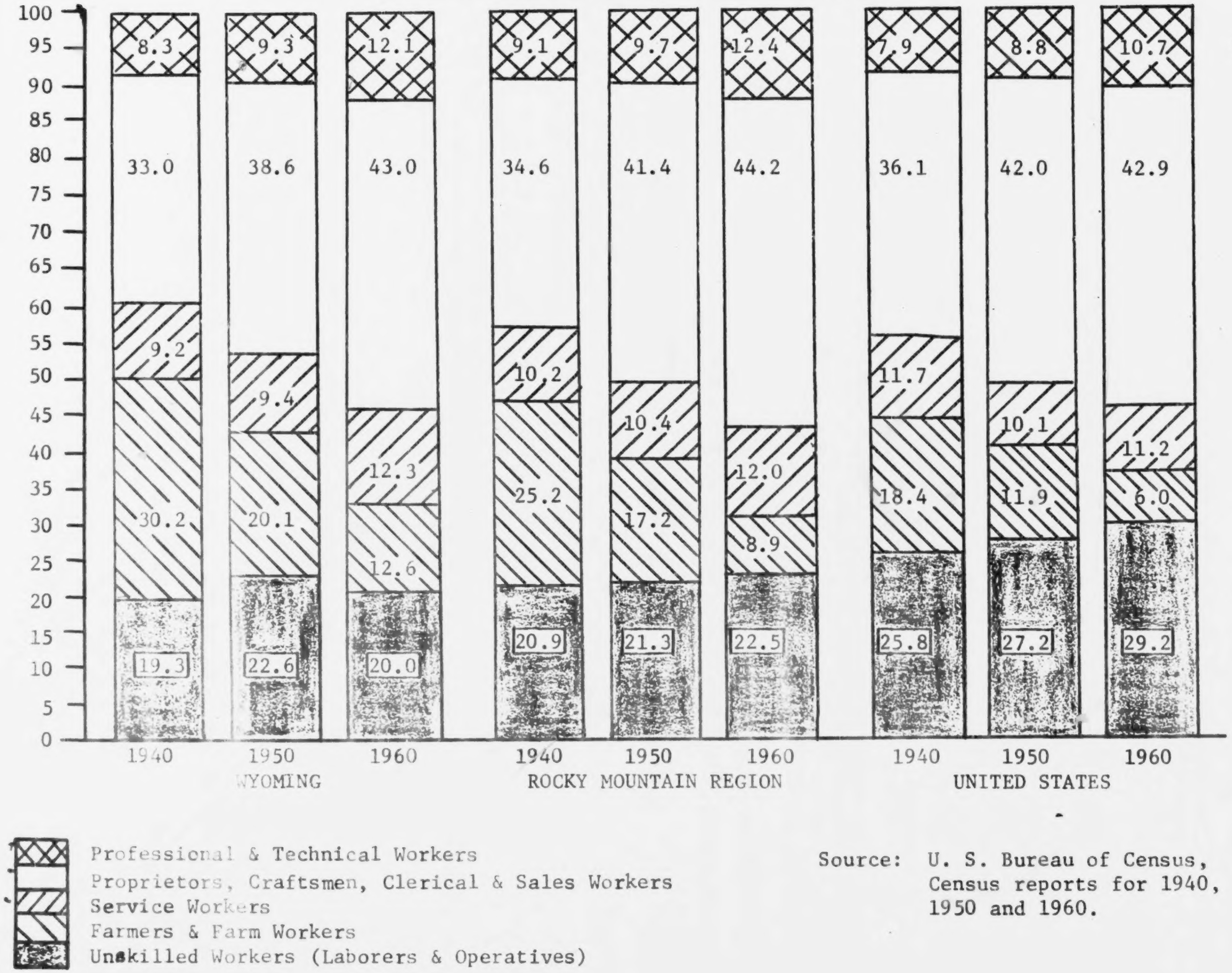
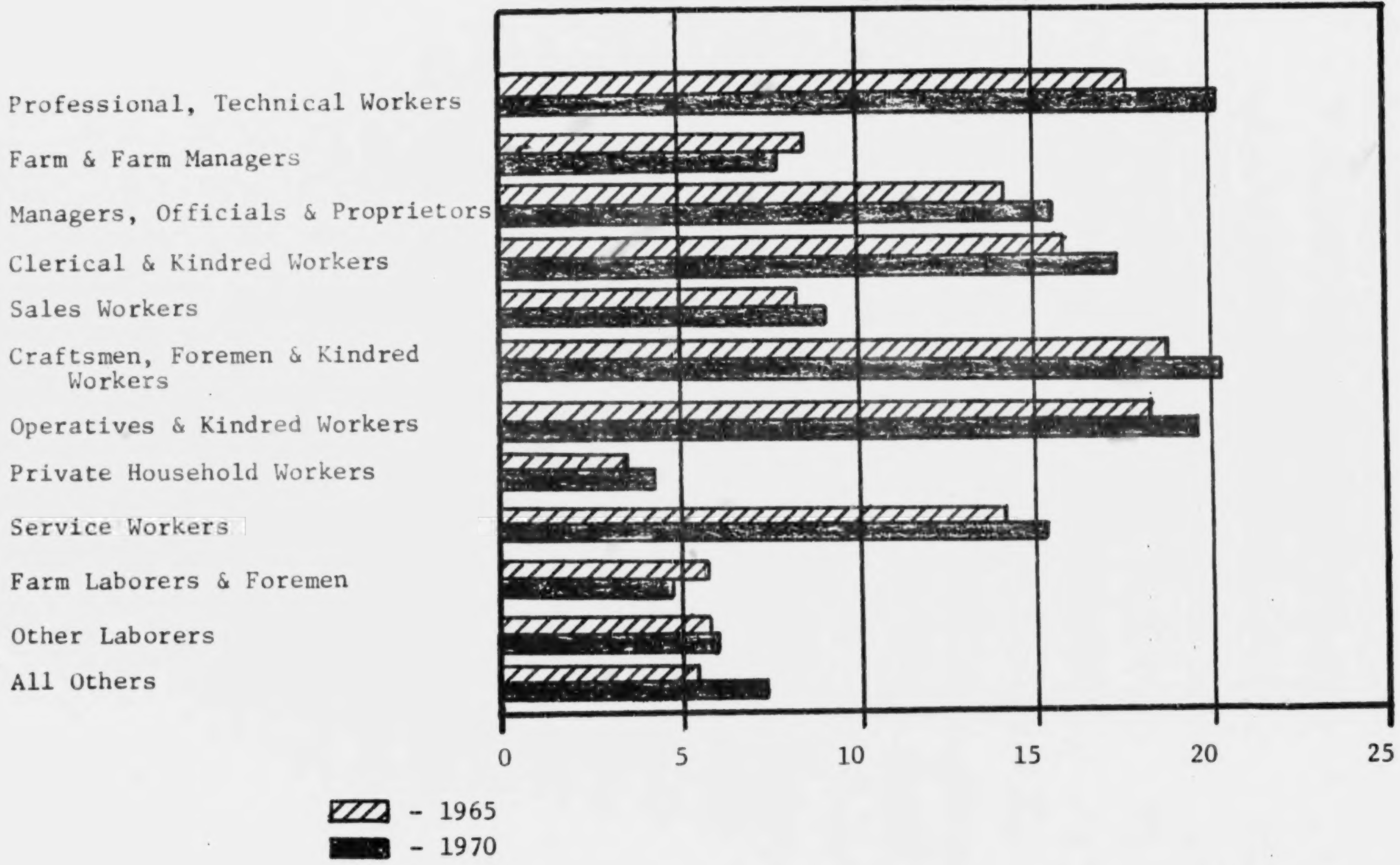
[29] The numbers of workers in various occupational classifications in Wyoming's labor force for 1940, 1950, and 1960, are shown in Appendix Table III.

Figure 16
PERCENTAGE OF TOTAL LABOR FORCE BY CATEGORIES



Source: U. S. Bureau of Census, Census reports for 1940, 1950 and 1960.

Figure 17
WYOMING LABOR FORCE PROJECTIONS
1965 and 1970

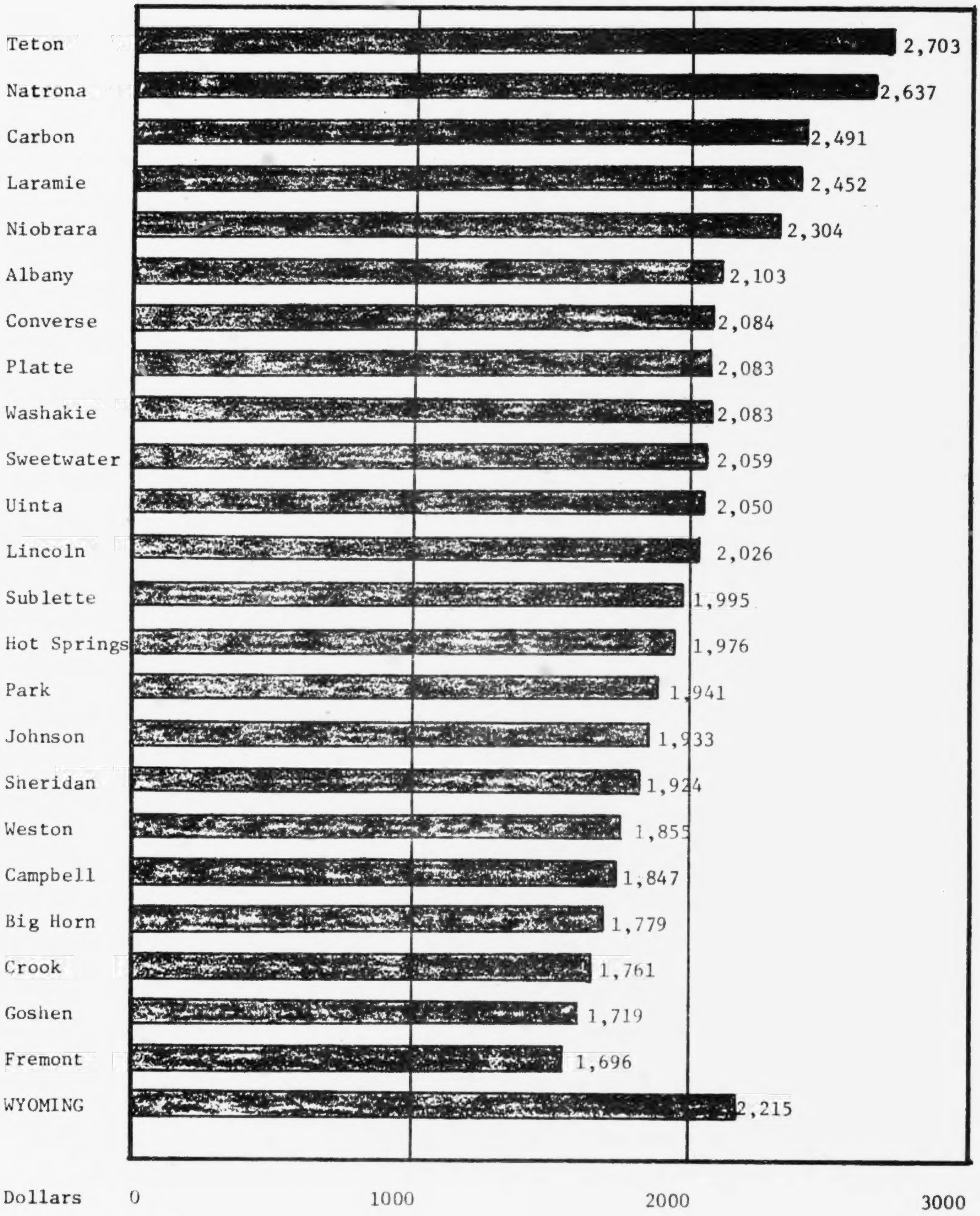


Source: Manpower Study, (Cheyenne: Wyoming Department of Labor and Statistics, March 1, 1966), pp. 2-5.

in Wyoming by 1970, by far the greatest relative growth of all occupations. Skilled and technical personnel are expected to increase by 1,332 in this period. Similarly, business expansion and population growth will enlarge the needs for sales and clerical workers by 2,283. But, the number of agricultural and unskilled workers is actually expected to decrease eight percent by 1970.

Better education will become the critical ingredient of accomplishment for the individual and the state as these trends continue in years ahead. More and more of our people must possess skills and technical competence built upon an adequate, basic education, or the social and economic development of the state will be severely handicapped. The native intelligence and ingenuity which once facilitated the conversion of land and cattle into realistic economic assets must now be employed to convert our Wyoming people into a better trained and more productive citizenry. The challenges of technologies require this generation and its leaders to develop the unlimited potential of the human and physical resources of this state and to produce a system of education beyond the high school which will challenge every Wyomingite to develop his talents, technical or academic, to the fullest.

Figure 18
PER CAPITA PERSONAL INCOME, WYOMING COUNTIES



CHAPTER III

EDUCATION FOR OUR CHANGING SOCIETY

The education of our people is the most basic resource of our society. Education equips man to think rationally and creatively in his quest for knowledge, for beauty, and for the full life. It provides the basis for effective democracy, and it is the most important force behind economic growth by advancing technology and raising the productivity of workers.

This country has led the way in making education available to all. It has the highest level of educational attainment and allocates almost six percent of its gross product to direct expenditures on education.[1] In spite of these impressive records, in recent years there has been widespread concern about both the quantity and quality of American Education. New demands caused by the forces of an increasing technological society, a dramatic population upsurge which has caused a tidal wave of school enrollments, and a growing democratization of educational opportunities have forced upon our schools greater problems than ever before in our history.

The purpose of this chapter is to examine the effects of these changes on our post-high school educational system; to take a look at present and past programs of our post-high school institutions; and to examine various proposals for changing the system and curriculum in order to best serve society's needs and to best prepare our people to live in our complex world.

Challenges to Higher Education

Post-high school education in America, as a result of the rapid changes in our society, is facing one of the most critical periods in its history. It is at once confronted with the problems of educating a rapidly growing student body, making adjustments in curricula for training technologists, engineers, and specialists, developing new adult education programs, carrying on numerous research programs, and providing various kinds of services to their communities while trying to secure adequate resources and staff to carry on high level programs of instruction. Several of these problems are examined here.

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[1] Economic Report of the President, Transmitted to Congress, January, 1965 (Washington, D. C.: U. S. Government Printing Office, 1965), p. 156.

College Enrollment

College enrollment is truly an explosive issue. The host of youth born during the post-World War II period is now approaching college age. The impact of this growth can be seen from the number of people in the United States reaching age 18 each year--18 being the typical age of college freshmen. The number of young people reaching 18 jumped from 2.6 million in 1960 to 3.8 million in 1965, just short of a 50 percent increase (see Figure 19). It is projected that this high level of growth will continue for many years.

College enrollments already reflect the influx of additional youth. The magnitude of this growth in college enrollments is seen from the fact that in the last 14 years the American college population more than doubled, and in the next 14 years it will more than double again. During the 14 years from 1951 to 1965, total college and university enrollment jumped from 2,100,000 to 5,570,000. According to current estimates, total enrollment next year (1966-67) will be 5,668,000; in 1970, 6,959,000; in 1973, 7,951,000; and just 14 years from now (1980) America will have 10,200,000 college students.[2]

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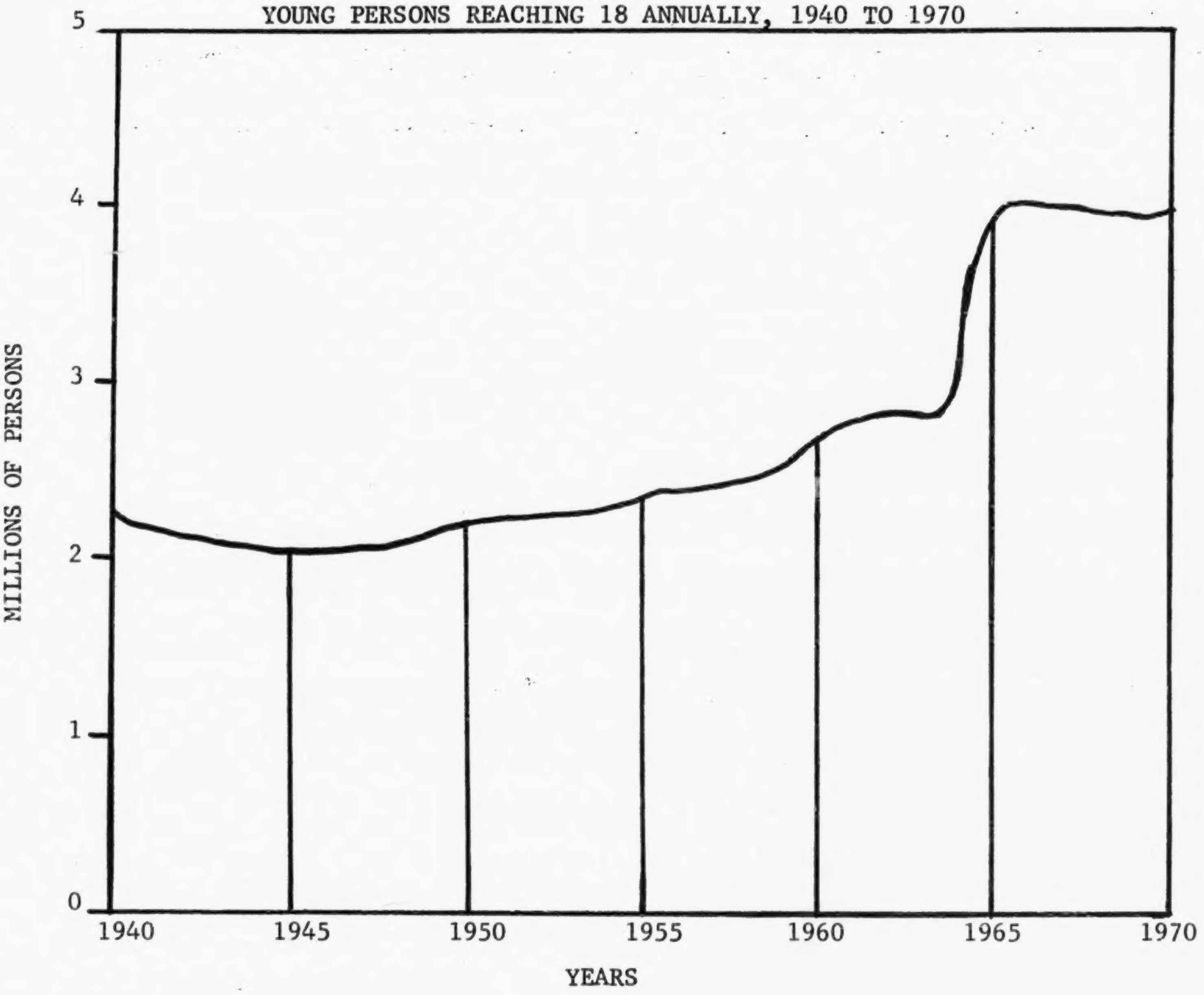
[2] U. S. Department of Health, Education, and Welfare, Projections of Educational Statistics to 1973-74 (Washington, D. C., 1964), pp. 2 and 6. Appendix IV shows this amazing growth.

Figure 19
YOUNG PERSONS REACHING 18 ANNUALLY, 1940 TO 1970



Source: Computed from U. S. Department of Health, Education, and Welfare, Projections of Educational Statistics to 1973-74 (Washington D.C., 1964) pp. 2 and 6.

The statistics showing the proportion of our young people in attendance at higher educational institutions are equally as startling. Table XIV shows that as late as 1940 only 19 percent of all Americans 18 to 21 years of age were enrolled in our colleges and universities; by 1950 this had increased to 26 percent, and by 1960 it had grown to 38 percent. That proportion has increased steadily every year until today (1965) 42 percent are in attendance. Predictions are that in 1980, just 14 years from now, 60 percent of the youth in this category will be enrolled in post-high school educational institutions.[3] The number of bachelor's or first-professional degrees earned has also increased dramatically. In 1953-54 a total of 81,499 degrees was earned in the United States in all fields; by 1963-64 this had almost doubled to 131,770 degrees. It is predicted that by 1973-74, 222,780 bachelor degrees will be awarded.[4] In 1965 for each 100 youth 21 years of age, there were 21.99 college graduates whereas in 1950 there were only 18.99. Table XIV shows this increasing number of college graduates.

Much of the growth in enrollments in higher educational institutions, however, has occurred in junior colleges. Junior college attendance increased from 156,456 in 1945-46 to 533,849 in 1961-62, and the number of junior colleges grew from 464 to 573 during this period.[5] By 1964, the total number

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[3] Fred E. Crossland, "Politics and Policies in College Admissions," Phi Delta Kappan, Vol. XLVI (March, 1965), pp. 299-302.

[4] U. S. Department of Health, Education, and Welfare, Projections of Educational Statistics to 1973-74, *op. cit.*, p. 13.

[5] U. S. Department of Health, Education, and Welfare, Digest of Educational Statistics, (Washington, D. C., 1964) p. 62.

TABLE XIV
COLLEGE ENROLLMENTS AND COLLEGE GRADUATION IN RELATION TO POPULATION GROUPS

Year	Enrollment in Colleges, Universities, Normal Schools, & Teachers Colleges	Population 18-21 Years	Number Enrolled Per 100 Population, 18-21 Years	Number of Graduates	Number of Persons 21 Years of Age	Number of Graduates per 100 Population 21 Years of Age
1870	----	----	----	9,371	725,000	1.29
1880	----	----	----	10,353	998,964	1.04
1890	156,756	5,151,067	3	14,306	1,246,876	1.15
1900	237,592	5,930,765	4	25,324	1,426,849	1.77
1910	355,215	7,335,453	5	34,178	1,789,404	1.91
1920	597,857	7,343,794	8	48,622	1,821,712	2.67
1930	1,110,737	9,026,741	12	122,484	2,211,031	5.54
1940	1,838,323	9,753,537	19	186,500	2,367,661	7.88
1950	2,281,298	8,945,000	26	432,058	2,275,650	18.99
1960	3,582,726	9,546,000	38	479,215	2,188,555	21.99

Source: U. S. Office of Education, "Statistical Summary of Education in the United States", Biennial Survey of Education in the United States, 1939-40 and 1959-60.

of junior colleges increased to 719 with an enrollment of 1,043,000--one-fifth of all students enrolled in institutions of higher education.[6] Even more rapid growth for public junior colleges in expected for the future. By 1975, it is predicted, there are likely to be no fewer than 1,000 public junior colleges, with an enrollment between four and five million students.[7]

Graduate School Enrollment

In addition to the increasing enrollments in undergraduate studies, there has been a rapid growth in graduate studies. Graduate enrollments in the United States grew from 219,000 in 1953 to 475,000 in 1963, more than doubling the enrollment; enrollment by 1965 had increased to 545,000; and it is predicted by 1973 there will be 885,000 graduate students enrolled, almost doubling the number enrolled in 1963.[8]

The number of graduates with master's and doctor's degrees has also increased significantly. In no year year before World War II did we confer more than 3,500 doctoral degrees, and the largest number of master's degrees in these years was in 1941-42 when 24,648 were awarded. Since World War II the number of doctoral degrees awarded increased from 1,966 in 1945-46 to

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[6] People, Purposes, Programs: Annual Report of the American Association of Junior Colleges, Washington, D. C., 1965, p. 8. Facing Facts About Two-Year Colleges (Newark, N. J.: The Prudential Insurance Company of America, 1965), p. 19. Appendix V shows the number of two-year colleges and their enrollments by state for 1964. Note that the enrollment statistics for 1964 are 1,040,570 by this source.

[7] Sidney G. Tickton, "What's Ahead for Public Junior Colleges," Junior College Journal 34 (November, 1963), pp. 9-11.

[8] Projections of Educational Statistics to 1973-74, op. cit., p. 8. Total fall degree credit enrollment, 1953 to 1973, shown in Appendix VI.

12,822 in 1962-63. The number of master's degrees increased from 19,209 to 91,366 during this same 17-year period.[9]

Despite these tremendous increases in the number of graduate students, all observers agree that the enrollment in this area must increase if the needs for college teachers, scientists, engineers, mathematicians, and other highly trained professions are to be met. President Kennedy, in the 1963 education message to Congress, said that the output of Ph.D.'s in the physical science fields alone should be increased two and one-half times the present levels to meet the needs of our scientific "research age." It can be expected that the mid-1960's "college bulge" will create a "graduate bulge" by 1970.

Adults Go To School

Another of the developments in U. S. education in the 1960's which reflected the growing awareness of the importance of learning was the tremendous growth in adult education. About 3.5 million persons were enrolled annually in 135,000 special classes offered by public schools outside regular school programs. There were classes in almost everything from homemaking to business, and from physical education to fine arts.

The most popular courses offered training in trade, industrial skills, and technical subjects. Together, they account for a sixth of the enrollments in adult classes. Of every 100 adults enrolled, about 13 took courses in homemaking and consumer education, 12 chose academic subjects, and 11 studied business education. Also popular with adults were arts and crafts, health instruction, physical education, fine arts, and, primarily for new citizens, courses in Americanization and citizenship.[10]

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[9] Digest of Education Statistics, 1964, op. cit., p. 96. cf. Doctorate Production in United States Universities 1920-1962: With Baccalaurate Origins of Doctorates in Science, Arts and Professions, (Washington, D. C.,: National Academy of Sciences, 1963) pp. 1-215.

Demands for even more adult education courses can be expected in the future. The nature and rate of technological change militate against the concept of terminal education. As technology upgrades the skill and knowledge requirements of jobs, education can no longer be confined to the traditional 12, 14, or 16 years of formal schooling. The Department of Labor projects that the average youth of today will probably shift occupations some five times over the next 40 years he is in the labor market. A life of continuing occupational adjustment will mean a life of continuing education to meet changed or additional educational requirements.[11]

Post-high school educational institutions are forced as a consequence of the continuous demand for adult higher education to create new programs to meet these needs. The magnitude of future demand for adult education is illustrated by the prediction that the adult division of universities and colleges will become the largest segment in the entire school system.[12]

What To Do With The Dropouts?

Despite the increase in college enrollments and attendance in adult education programs most of our youth--60 percent--still do not go to college. In fact, the educational attendance of the bulk of the nation's population is below high school. In 1960, 59 percent of the adults aged 25 and over had less than four years of high school.[13] Too many youths still are failing to obtain a high school education. Slightly less than half of all fifth grade pupils finish high school, and less than two-thirds of those in the ninth grade remain through grade 12. In other words, one out of every three ninth graders fails to finish high school.[14]

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[10] Arnold B. Barach, U.S.A. and Its Economic Future: A Twentieth Century Fund Survey (The Macmillan Company, N. Y., 1964), p. 69.

[11] Grant Venn, Man, Education, and Works (Washington, D. C.: American Council on Education, 1964), p. 26.

[12] Ferdinand Lunderg, The Coming World Transformation (Garden City: Doubleday, 1963), p. 395.

Many of these dropouts will spend a large part of their potentially productive lives seeking a job that does not exist. Instead of contributing to the growth of our economy and carrying their load in taxes to pay for public services, they will be a drain on society. Much of their income will come from unemployment compensation and welfare payments. This will be tragic for these people and their families as well as a block on our system of enterprise in the eyes of the world.

Dropouts from college also are too high. Approximately 30 percent of the entering freshmen never make the sophomore year, and another 62 percent do not complete the four-year college program. While these young people are somewhat better off than the high school dropouts, few of them have sufficient work skills for today's labor market. Many of these will take jobs where they will be underemployed, and, in turn, will take a job away from a person with only a high school or less than a high school education. To train these people, the dropouts either from high school or college, and to make all of our people vocationally competent in a society of accelerating technology are serious challenges to our educational system today.

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[13] Selected Manpower Indicators for States: Manpower Research Bulletin, Nov., 1963, Washington, D. C., U. S. Department of Labor, 1963, p. 15.

[14] Research Bulletin (Washington, D. C.: National Educational Association), Vol. 38, Feb., 1960, p. 11.

Advancing levels of education and training are required of all workers because of the swift growth of technology which has made all jobs more complex. Fundamental changes have occurred in the man-machine relationship as a result of technological changes. The number of repetitive jobs, such as those found on assembly lines where all you need is your five senses and an untrained mind, has been greatly reduced, while the number of jobs involved in designing, engineering, programming, and administering these automatic production systems has been greatly increased. Manpower needs of the future will emphasize technological workers, the professions, and occupations requiring a high level of education or some specialized training.[15] Projections of employment in the U. S. from 1900-1985 are shown in Figure 20. This Figure clearly shows that the main growth in employment will be for skilled workers.

Education has become the crucial ladder to the reward positions in society. The relationship between education and employment is well documented. Almost every study of employment and unemployment conditions points up the importance of skill, training, and education in the labor market. The highest unemployment rates, as well as the largest percentage of poverty, exist among the unskilled and the undereducated. At the other end of the scale, however, unemployment rates are extremely low among skilled, better-educated workers.

There is a paradox in the present situation in the United States. Throughout the 1960's, we have had substantial unemployment among workers--but substantial shortages of scientists, engineers, teachers, technicians, and others in service occupations. Unfortunately, an unskilled laborer cannot

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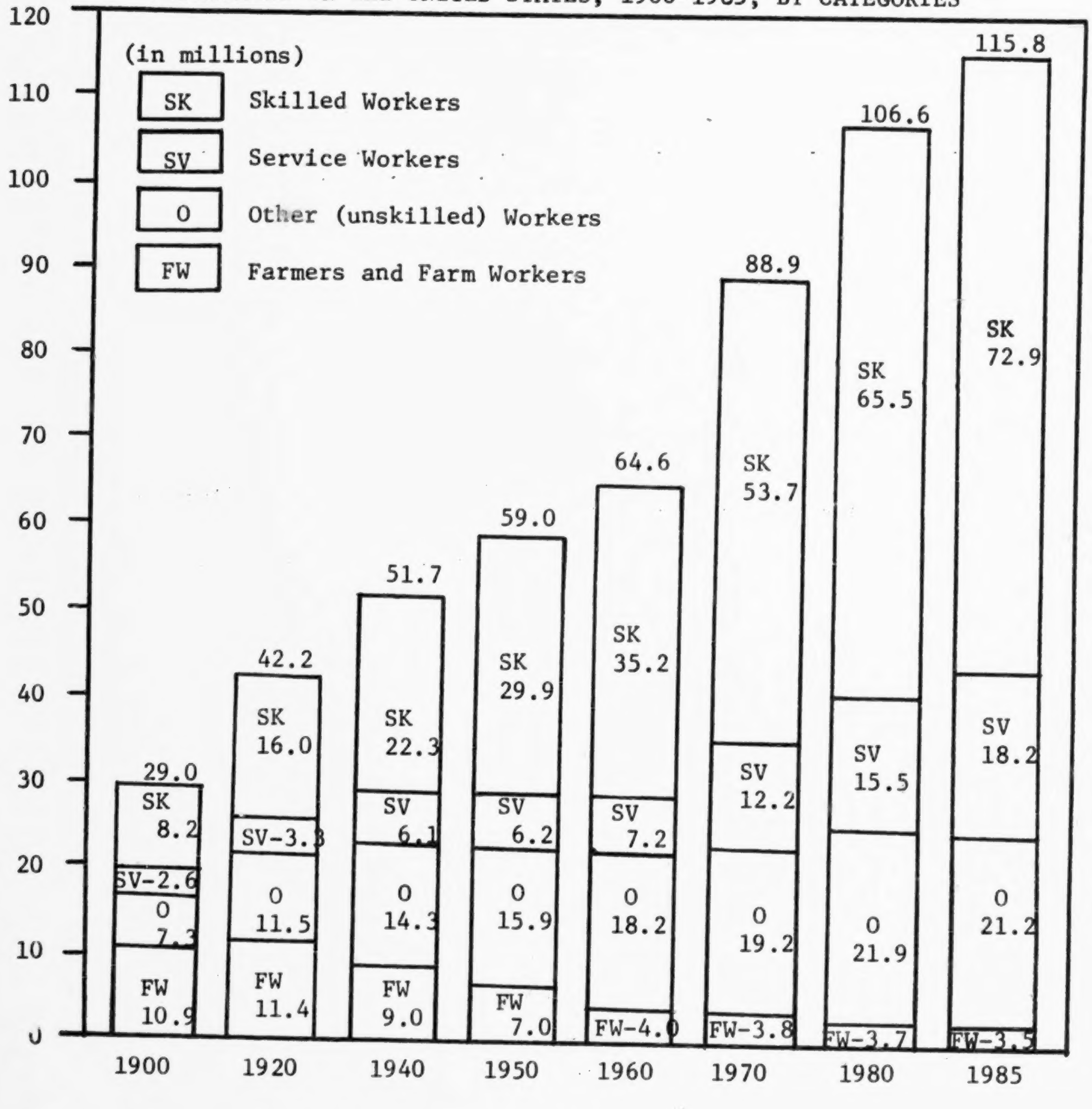
[15] Charles C. Killingsworth, "Automation, Jobs and Man Power," Men Without Work: The Economics of Underemployment, (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1964) p. 59.

Figure 20
EMPLOYMENT IN THE UNITED STATES, 1900-1985, BY CATEGORIES



Source: U. S. Department of Commerce, Bureau of the Census Working Paper No. 5, 1958.

usually be converted into a teacher or engineer. Some, however, can be trained to higher or different levels of skills. Yet, the challenge we face in the future is to encourage young people in such a way that a much larger number can avail themselves of sufficient education to fill positions in which there are permanent and growing shortages, so that the unbalance we now face will, in the long run, be alleviated.[16]

Problem of What to Teach

The expansion of the higher education enterprise has been accompanied by ceaseless efforts to construct and reconstruct the curriculum to meet the needs of modern American life. The facts of 20th century life--a rapid change in society, a mounting store of knowledge, a new understanding of people and learning, and a greater need for vocational training by all people--create a basic problem relating to instructional programs in post-high school institutions. What should be taught has become, in recent years, a critical question.

The problem of what to teach was brought dramatically to the attention of the public during the 1950's as a result of the Russian success with "Sputnik." Americans immediately undertook a serious look at their educational systems. Changes were instituted immediately in many institutions with crash programs and additional requirements for mathematics, science, and foreign language. Advanced placement programs for high school students were instituted and special "honor" sections created for the academically talented. The demand for a return to "solid subjects" had great impact upon the educational system. By the end of the decade we had greatly modified degree requirements in many of our colleges and universities; we had also put calculus in the high school, foreign language in the junior high school, higher mathematics in the elementary school, and vocational education in the doghouse.

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[16] For a discussion of the problems involved in this task see: "Educating the Culturally Deprived in the Great Cities," Phi Delta Kappan XLV (Nov., 1963), entire issue.

The manpower problems of the 1960's again challenge our educational curriculum. There is now a new demand for additional vocational education in the curriculum. The problems of automation and the problems of a huge increase in the numbers of youth have led to the employment problem which has forced us to recognize the importance of vocational education in our post-high school institutions.

Despite this greater emphasis on vocational education there are many who ask the question, "Is vocational training alone realistic in an age of automation?" These critics point out that machines are going to do many of the jobs that men now do. Man has got to learn to live in a world that does not need the same type of work that was needed in past epochs. The promise of a world where work occupies less of man's time presents some serious challenges. Will leisure become a curse or a promise? For what do we train our young people in an age of automation?[17]

There is little agreement on what colleges should teach. As society grows more complex, specialization becomes more essential, but general and liberal education also become increasingly important to maturity and growth of men and women who are to exercise leadership in all fields of American life. The total enterprise of higher education must involve a careful balance between general education and specialized education if the fears of technological change are not to create the disruptions of our society.

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[17] G. P. Childs, "Is the Work Ethic Realistic in an Age of Automation?," Phi Delta Kappan XLVI (April, 1965), p. 370.

Striking this balance is the problem presently facing the American educational system.[18]

New Emphasis on Vocational-Technical Education

Vocational and technical education has assumed a new importance as a result of the continued high rate of unemployment, the shortage of severely needed personnel in many technical, semi-professional and skilled occupations, and the needs for retraining and continued education of workers displaced by automation. The 1960's have seen parents, businessmen, and industrialists all seeking answers to the basic question of how best to prepare youth for jobs. Although post-high school institutions in the past were slow to add vocational-technical education to their curricula, new demands have led more and more of them to assume a role in the education of technicians. New types of post-high school institutions designed particularly to teach vocational and technical subjects have been created by many of the states, and the curriculum in many junior and senior colleges has been expanded to include technical-vocational programs.

The growing concern over educating people for our rapidly changing technical society has resulted also in the enactment of a number of major pieces of federal legislation. Six major acts pertaining to vocational-technical education have been enacted by Congress since 1958. These include: The National Defense Education Act (NDEA) of 1958, the Area Redevelopment Act (ARA) of 1961, the Manpower Development and Training Act (MDTA) of 1961, the Vocational Education Act of 1966, the Higher Education Facilities Act of 1963, and the Economic Opportunity Act of 1964.

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[18] Educational Policies Commission, Higher Education in a Decade of Decision (Washington, D. C., National Education Association of the United States and the American Association of School Administrators, 1957),pp. 43-66.

Together this package of federal legislation may be regarded as a massive social protest against the failure of our schools to meet the vocational education needs of our people. Certainly, the enactment of these acts has had a great influence on the post-high school institutions and their curricula.[19]

Although the new federal legislation emphasizing technical-vocational education has given a great stimulus to this type of education, the federal government is not new to this area of occupational education. From 1862 and the passage of the famous Morrill Act, better known as the Land Grant Act, the federal government has promoted practical education of the industrial classes. This tradition was extended in the Smith-Hughes Act of 1917, which was passed to assist states to promote vocational agricultural trade and home economics education. In 1946 this program was continued and expanded under the George-Barden Act. However, much of the emphasis of these earlier programs was to support occupational education in the high schools rather than the post-high school institutions. The main federal assistance for vocational-technical education in the post-high school has come since 1958.[20]

National Defense Education Act

The National Defense Education Act, enacted in 1958,[21] was a reaction to "Sputnik." The space flight success by the Russians focused public attention on our educational system and its failure to turn out sufficient technical personnel, particularly in science and engineering. Congress quickly reacted by enacting the National Defense Education Act. Title VIII of the Act specifically provided for training highly skilled technicians in fields necessary for national defense. Fifteen million dollars annually for four years were appropriated, and this was later extended for two additional years, until June 30, 1964.[22] Although it was provided that programs must be of less than college grade, monies could be used to provide technical education in two-year colleges or technical institutions. Many junior colleges received federal monies for their vocational education programs under this legislation.[23]

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[19] Gordon Swanson, "Action in Vocational Education Considered as Social Protest," Phi Delta Kappan XLVI (April, 1965), pp. 153-154.

[20] Grant Venn, Man, Education and Work: Post Secondary Vocational and Technical Education (Washington, D. C., American Council on Education, 1964), pp. 114-118.

[21] Public Law 85-864, 85th Congress, approved September 2, 1958.

Area Redevelopment Act

Three years after the passage of the National Defense Education Act, Congress enacted the Area Redevelopment Act and authorized $4.5 million annually until 1965 for vocational education.[24] This legislation recognized the critical need for training which arises from unemployment and underemployment in economically distressed areas. Vocational education programs were authorized for unemployed and underemployed persons in certain geographic areas which have been designated as redevelopment areas by the Secretary of Commerce.

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[22] Public Law 87-344, 87th Congress, approved October 3, 1961.

[23] Grant Venn, op. cit., p. 115.

[24] Public Law 87-27, 87th Congress, approved May 1, 1961.

Manpower Development and Training Act

The Manpower Development and Training Act of 1962[25] expanded the ARA training concept by recognizing that the training needs of the new technology are nationwide and not confined to chronically depressed areas. It authorized the establishment of training programs for unemployed and underemployed persons who cannot obtain full-time jobs with their present skills or who are working below their occupational potential. Subsistence and transportation allowances are made to the trainees. This Act originally authorized $97 million for the first year and $161 million each year for the second and third years for training and skill development programs.

Many of the MDTA programs have been carried on under cooperative relations with the junior colleges throughout the country. In other instances, where technical institutions or area technical schools are in existence, these programs have been conducted in these institutions.[26]

Higher Education Facilities Act

Congress also enacted in 1963 the Higher Education Facilities Act to assist in building educational plants to accommodate the mounting student enrollments. Vocational educational facilities in community colleges, technical institutes, and two-year branch campuses of colleges and universities were given preference under this Act. A portion of the funds was earmarked for these types of facilities, and a larger percentage of federal support--40 percent rather than 33.3 percent--was made available to institutions building vocational educational facilities.[27]

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[25] Public Law 87-415, 87th Congress, approved March 15, 1962.

[26] Education for a Changing World of Work: Report of the Panel of Consultants on Vocational Education (Washington, D. C., U. S. Department of Health, Education, and Welfare, 1963), pp. 25-28.

Vocational Education Act of 1963

The Vocational Education Act of 1963 opened the door to establishment of comprehensive vocational education programs at the secondary and post-secondary levels. It established a new federal-state cooperative program based upon a broadened concept of education for work, and a greatly increased appropriation was made available for this program. The Act contains several features designed to keep vocational education abreast of the labor market realities. It stipulates:

1. The designated state board for vocational education must periodically review its use of federal money and justify that use in terms of the current and projected manpower needs of the state.
2. The state program must be run in cooperation with public employment services.
3. An independent advisory committee is established to advise the U. S. Commission of Education on the national administration of the program in the light of relating the programs to actual training requirements.
4. The legislation requires the appointment in 1966 of a national advisory committee to make recommendations to Congress for the improvement of the program.

This Act proposes to bring vocational preparation to many groups and individuals not served by existing programs, and federal funds are available to states on a matching basis for the establishment of area technical-vocational schools. Federal vocational education allotments may be used, according to the state plan, for six basic purposes:

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[27] Grant Venn, op. cit., pp. 125-127.

1. Public high school vocational education programs.
2. Full-time programs for high school graduates and dropouts.
3. Adult education, full or part-time.
4. Specialized programs for handicapped persons.
5. Construction of area vocational education facilities.
6. Ancillary services: i.e., teacher training, administration, demonstration projects, evaluation, development of instructional material, etc.[28]

Economic Opportunity Act

The Economic Opportunity Act of 1964, the foundation of the "War on Poverty," although not primarily an educational measure, contained a number of educational programs. Operation Head Start, perhaps the best known of these programs, assists culturally deprived youth in obtaining some of the skills they need to enter elementary school. The Job Corps and the Work Study program are two other programs designed to assist youth in obtaining work and educational experiences which will help them adjust to our industrial society.

Another facet of the War on Poverty is the Adult Basic Education Program administered by state education departments. This program is for the benefit of those adults (18 years and over) who do not have a sufficient command of the English language. It recognizes that a worker's inability to read and write English is a serious employment handicap and that such workers are virtually restricted from benefits which might be derived from vocational training.

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[28] "A Schoolman's Guide to Federal Aid," School Management IX (June, 1965), pp. 96-122.

Where to Teach Occupational Education

Greater emphasis on occupational education at the post-secondary level, coupled with the dramatic increases in college enrollments, has raised the question of where post-high school vocational education should be taught. A variety of answers has been given to what type of institutions should offer these programs but there is no single pattern of institutional responsibility in the various states for offering occupational education beyond the high school. Within the past decade nearly every state has added to its complex of vocational-technical schools, and at the present, programs of every kind and quality are offered by a variety of educational institutions, including comprehensive high schools, trade and technical high schools, area vocational schools, technical institutes, special state schools, two-year colleges, four-year colleges and universities.[29] Each of these proposals has its proponents.

Vocational and Technical High Schools

Occupational training for adults in some instances is offered as an adjunct to the public school program. This type of program has been found mostly in the large urban centers. The Emily Griffith Opportunity School in Denver is a good example in our region. This school is a part of the Denver Public Schools and offers day and evening classes, high school, and post-high school courses tuition-free to Denver residents. The Opportunity School offers a wide variety of courses as can be seen from its departmental structure which includes departments of apprenticeship, business education, distributive education, general education, high school, homemaking education, parent and pre-school education, trade, industry and technical education, and Manpower Development Training. Community manpower needs determine the types and content of the occupational courses offered. Vocational counseling and testing are stressed to help individuals select a training program suitable to their abilities and needs.

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[29] Grant Venn, op. cit., p. 86.

The Opportunity School for the school year 1964-65 had 40,570 registrations. Most of these persons were registered in the various occupational courses; only nine percent of the student hours were in the high school program. Over half of the enrollment were adults 30 years or over who had finished high school or better and were employed either full or part-time. Persons with less than a high school education made up about 25 percent of the high school enrollment. Courses in the departments of trade, industry, and technical education, business education and distributive education are the most popular courses.[30]

Area Vocational Schools

Area vocational schools have been still another type of institution added to the states' post-secondary school system in recent years. These schools, developed under the stimulus of changing technology and the recent federal legislation, attempt to fill the void found in most states' educational system for offering technical and industrial education beyond high school. Designed particularly to train technicians, skilled craftsmen, and skilled specialists, they offer a wide range of occupational courses and perform a variety of functions that do not lend themselves to easy classification within the traditional pattern of American education. Normally any adult, if he meets the minimum admission requirements that vary among courses and curricula, may receive an occupational oriented education in these institutions for a very nominal cost. Area schools also often offer vocational training for high school students who are brought in by bus from several surrounding high schools. Evening classes for adults employed full-time, as well as adult programs under federal programs such as Manpower Development Training Act, are also given at these institutions.[31]

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[30] Annual Report, Emily Griffith Opportunity School, Denver Public Schools, 1965.

Curricula in area schools range from the most straight-forward crafts to quite sophisticated technical skills. Programs are developed largely on the basis of local manpower needs. Types of programs normally offered in these institutions can be seen from the course offerings in Minnesota's area vocational-technical schools. Minnesota has 20 area vocational schools and trains students for jobs as airframe and power plant mechanics, architectural drafing technicians, auto body repairmen, commercial artists, electrical power technicians, electricians, electronic technicians, cosmetologists, instrument technicians, licensed practical nurses, machinists, mechanical drafting technicians, patternmakers, photo offset lithographers, printers, sheet metal workers, shoemakers, tailors, tool and die makers, tool design technicians, upholsterers, watch repairmen, welders, bakers, farm equipment mechanics, radio and television repairmen, and in distributive occupations, office occupations, farm and agriculture occupations, and needle arts and power sewing occupations.[32]

Courses designed for the training of skilled craftsmen have as their objective the preparation of persons for effective entrance into a single craft. These programs are usually provided in the form of short, intensive programs of specialized work which normally include relatively little in related technology. Curricula for the training of technical specialists, on the other hand, are designed to prepare a person for entrance into specific clusters or groups of closely related occupations of technical types. Content of these courses includes intensive coverage of technology peculiar to the occupational cluster, supported by basic technology, appropriate mathematics, science, and general education. The length of the technician courses extends up to two years. The difference between the craft and technical training curricula in North Carolina industrial education centers is shown in Figure 21.

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[31] Grant Venn, _op. cit._, p. 81.

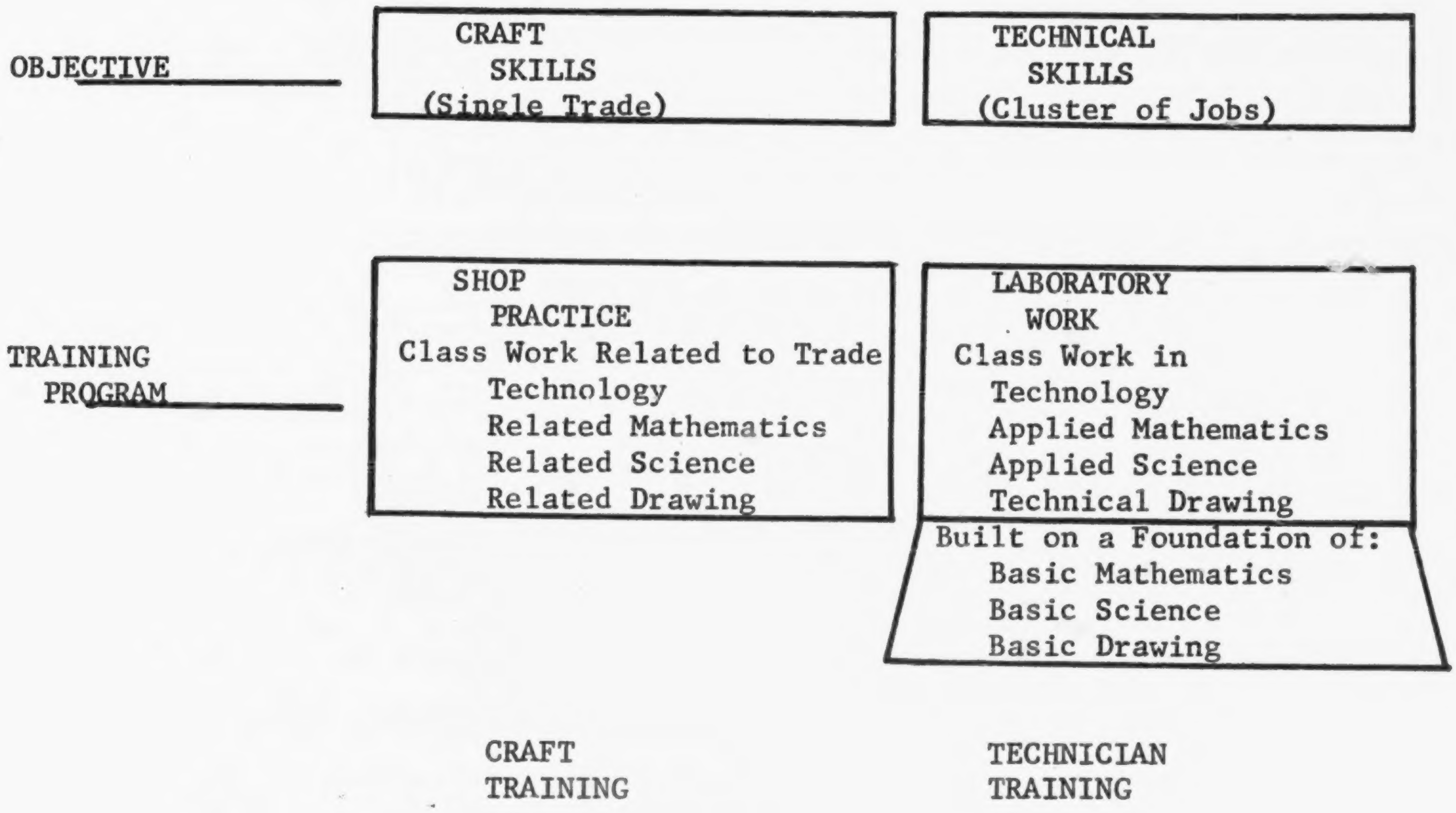
[32] _Informational Bulletin on Minnesota's Area Vocational-Technical Schools_ (St. Paul, Minnesota: State Department of Education, 1965), #55101.

Two-Year Colleges

The expansion of the "two-year college" has been one of the most notable developments in post-high school education in 20th century America. The phenomenal growth of these institutions, which include junior colleges, both private and public, community colleges, technical institutes, and two-year off-campus centers of four-year colleges and universities, testifies to their ability to meet today's diversified educational needs.

The junior college movement, which began about the turn of the century, provided for the first two years of a four-year college education. The transfer program normally was the full extent of the program of such institutions. In recent years the program of the junior college has been expanded to include vocational or occupational courses to help students to adjust to their particular community. Junior colleges have assumed the new name of community college to indicate this larger role.

Figure 21
CRAFT AND TECHNICAL TRAINING CURRICULA IN
NORTH CAROLINA INDUSTRIAL EDUCATION CENTERS



OBJECTIVE	CRAFT SKILLS (Single Trade)	TECHNICAL SKILLS (Cluster of Jobs)
TRAINING PROGRAM	SHOP PRACTICE Class Work Related to Trade Technology Related Mathematics Related Science Related Drawing	LABORATORY WORK Class Work in Technology Applied Mathematics Applied Science Technical Drawing Built on a Foundation of: Basic Mathematics Basic Science Basic Drawing
	CRAFT TRAINING	TECHNICIAN TRAINING

Source: A Guide to the Further Development of Industrial Education Centers in North Carolina, (Raleigh, N. C.: Department of Curriculum Study and Research, State Board of Education, 1963), p. 10.

The program of the comprehensive community college today normally includes: (a) the first two years of a full collegiate program; (b) many kinds of students for general education integrated with vocational-technical training for sub-profession occupations; (c) many kinds of short courses required for upgrading employed persons and for retraining of employees because of changes in business and industrial development; and (d) adult or continuing educational programs and courses of the kind desired by the community.

Many area community colleges have become centers for social and cultural life, providing opportunities in the creative and performing arts as well as a meeting place for various community groups and individuals seeking to enrich their lives through learning.

Proponents of community colleges claim that these institutions extend further educational opportunities to the youth and adults near their home, thereby reducing the cost to students and frequently to taxpayers. The cost of constructing a community college, where boarding facilities are not required, is less than the cost of constructing a residential college. In addition, the community college provides a favorable opportunity for students who have not decided on a career to explore more fully their interests and plans.

The growth of this type of institution has been phenomenal, as previously seen, and in some states, such as California, this type of institution has made it possible for the state to maintain an open door policy for all students. In these institutions all people can receive higher education, including courses in a wide range of occupational choices. California community colleges, for example, offer in addition to the regular college transfer program, training in possibly 75 to 100 different vocations ranging from chemical, electronic, and medical technology to advertising, commercial art, cosmetology, and law enforcement.[33]

Technical Institutes

Still another development in the states' complex of vocational-technical schools is the technical institute. Although this type of institution has a history back to the 1820's, it has been only in recent years that it has made any real gain in this country.[34] Since the beginning of World War II, the demand for technological personnel has grown at a rapid rate. This trend is reflected in the fact that within a relatively few years the requirement of United States industry for persons on its engineering staff has risen sharply from one for every 2,000 employees to a 1957-58 ratio of one to 50 and it is still growing. The growing demand for technicians of all kinds has led to the creation in many of our states of technical institutes to train skilled technicians.

The basic objective of the technical institute idea in higher education is the development of qualified engineering technicians proficient in a selected field of technology. Thus, the technical institute program leads to a specific objective just as any collegiate program does. In general, the technical institute program is designed to accomplish its objective within two academic years--some programs are longer, some have been shorter.

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[33] N.E.A. Journal, op. cit., pp. 51-52.

[34] C. Wallace Henninger, The Technical Institution in America (New York: McGraw Hill Book Company, Inc., 1959), pp. 1-15.

The Salt Lake Trade Technical Institute in Salt Lake City is an example of such a technical institute in our region. Its objective is the training of persons to qualify them for new or advanced opportunity in industry. The institute offers day school occupational preparatory education as well as evening programs for this purpose. It also offers apprentice related training as well as programs to aid workers who have reached the fully trained or journeyman level to keep abreast of ne developments in their fields and to prepare themselves for advancement as offered. Federally sponsored programs, such as the Manpower Training Programs, also are taught at this institution, and high school students from the region may attend on a part-time basis to obtain occupational training.

Enrollment at the Salt Lake Trade Institute is open to all applicants 16 years of age or older whether they have completed a high school education or not. Tuition fees are low and there are numerous scholarships available. The programs offered at the Salt Lake Trade Technical Institute include auto body repair, auto body painting, automobile mechanics, barbering, building technology, business practice, commercial art, cosmetology, diesel mechanics, drafting, architectural drafting, mechanical drafting, electricity, electronic technology, machine shop technology, practical nursing, printing, surveying, and welding. Related training subjects are required for all courses, and the students spend part of the training program in related programs such as mathematics, English and physics.[35]

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[35] Salt Lake Trade Institute, Catalog for 1965-66.

For the academic year 1965, a total of 659 students attended the Salt Lake Trade Technical Institute. The average age of the students was 22.6. The youngest was 16 and the oldest was 63. Approximately 176 of the students were married, but only 50 of the 659 were employed full-time; 80.6 percent (531) of the enrollment at the Institute had completed high school; 128 were not high school graduates; 81 had some education beyond high school; and six had completed four years training elsewhere before attending the Institute.[36]

The director of the Institute in Salt Lake City stated that this type of institute was greatly needed in that region because it was the only institution offering the highly technical programs. He further pointed out that most of the students attending the Institute were better able to adjust to the technical institute environment than they were to a normal four-year liberal arts education or to a two-year junior college program. The "no-nonsense" attitude and the emphasis on vocational competency in a technical field help many formerly unsuccessful students succeed at Salt Lake City Trade Technical Insitute.

Colleges and Universities

Senior colleges and universities in the United States traditionally have occupied themselves with baccalaureate and advanced degree programs to the exclusion of technological curricula designed to develop quaiified technicians in engineering and other subject fields. However, occupational education is offered in many of our colleges and universities, and this, too, has been a long tradition. Throughout our history, colleges and universities have been preparing young people to take their places in the economic life of the day. Even the classical education in the early American college, in a sense, was vocational, as it prepared one for the professions, particularly the ministry. Since the enactment of the Morrill Act of 1862 with its emphasis on "the liberal and practical education of the industrial classes in the several pursuits and professions in life," many of our colleges have offered various kinds of occupational education. In recent years an increasing number of colleges and universities has recongized the significance and potential of this intermediate zone of higher education. Pioneers in this work include Purdue University, Pennsylvania State University, Oklahoma State University, University of Houston, University of Dayton, Georgia Institute of Technology, and North Carolina State College. Some of these technical institute programs are conducted in campus divisions; others have established separate campuses, largely because of fortuitous circumstances and available faculty and facilities.[37]

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[36] Summary of 1965-66 student questionnaire prepared by the Sale Lake Trade Technical Institute, October 1, 1965.

In 1959, 403 four-year colleges and universities were offering occupational curricula of sub-baccalaureate level. In the fall semester of 1960, 75,665 students were enrolled in the sub-baccalaureate occupational curricula in the four-year institutions; 44,014 were full-time students; and 31,651 were part-time.[38]

Several four-year institutions in our region now offer sub-baccalaureate technical education programs. The University of Nevada, in 1965, began to offer a number of these types of programs. Three programs are presently being offered on both the Reno and Las Vegas campuses: drafting, technology, electronic technology, and X-ray technology. Drafting and electronics both lead to associate and science degrees at the end of two years for those completing the required 60 credit hours. The X-ray technology certificate program leads to a certificate in X-ray technology, but not to a degree.[39]

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[37] G. Ross Henniger, op. cit., p. 7.

[38] Grant Venn, op. cit., pp. 94-95.

Weber State College, located in Provo, Utah, is another four-year institute in our region that offers training for technologists. Both two- and four-year programs in technology are offered at Weber State. Four-year programs include auto mechanics, welding, tool engineering, and aeronautical engineering.

Kansas State College at Pittsburgh, Kansas, is still another of the four-year institutions which offers vocational-technical training. The department of vocational-technical training at Kansas State College has as its major objective the training of youth and adults for successful employment in industry. Emphasis is placed on basic technique skills which apply specifically to the needs of industry. The objective of each course is to prepare students for useful and productive employment and to upgrade employed workers. Any out-of-school youth over 16 years of age or adult who is in need of vocational training and who has the aptitude and ability to profit from training required in the particular courses selected may attend. The vocational courses are especially designed to serve the high school graduate, the physically handicapped, and the person who has not completed high school. The facilities of the school are planned to meet the needs of three main groups of people: (1) persons who are in need of pre-employment training and desire employment upon the completion of training in the occupational area studies; (2) persons who need related instruction to supplement apprenticeship training in which they are currently engaged; and (3) persons classified as journeymen who need extension training to expand their knowledge in the occupations in which they are already engaged. Course offerings at Kansas State College are similar to those in other technical instituions. For instance, they include such programs as air conditioning and refrigeration, auto body repair and auto mechanics, cabinet and furniture making, cosmetology, drafting, technology, electricity, machine shop, radio and television repair, and welding.

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[39] Mountain Plains Adult Education Association, Newsletter, Autumn Quarter, 1965.

Oklahoma State College also has a vocational-technical branch, located some 100 miles from the main campus, in Okmulgee, Oklahoma. This technical branch operates much like the technical schools heretofore mentioned. There is a great demand for this type of education, illustrated by the fact that 2,300 full-time students were enrolled at Oklahoma Tech during 1965.

As can be seen from the foregoing, there is no single system for post-secondary occupational training in the states. In fact, the development has created problems of finance and coordination in state government which we shall turn to next.

Problems of Financing Higher Education

Decisions about the expansion and improvement of higher education are directly related to finance. In the next 10 years colleges and universities will require an enormous increase in funds from all customary sources.

Annual current expenditures by institutions of higher education (in 1962-63 dollars) went from $3.1 billion in 1953-54 to an estimated $7.6 billion in 1963-64--an increase of 145 percent. Rising enrollment, combined with an increasing cost per student, is expected to cause current expenditures to climb to $14.6 billion in 1973-74--an increase of 92 percent over the 1963-64 figure.[40]

The annual cost per student (in 1963-64 dollars) for student education rose from $900 in 1953-54 to an estimated $1,087 in 1963-64 and is expected to climb to $1,274 by 1973-74.[41]

Annual expenditures for capital outlays by institutions (in 1961-62 dollars) rose from $0.7 billion in 1953-54 to an estimated $1.7 billion in 1963-64. Total capital outlay during the 10-year period 1954-55 through 1963-64 provided accommodations for 2.1 million additional students (full-time equivalent) over the 10-year period. A total of $19.6 billion in capital outlay is projected for the 10-year period 1963-64 through 1973-74, $10.8 billion for the first five-year period and $8.8 billion for the second five-year period.[42] Table XV shows total expenditures made on institutions of higher education from 1953-54 to 1973-74.

With continued increase in expenditures by higher education, it is obvious that the tuition policies and student-aid programs of all institutions will require constant re-examination and adjustment. This is necessary

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[40] *Projections of Educational Statistics to 1973-74* (Washington, D. C., U. S. Department of Health, Education, and Welfare, 1964), p. 29.

[41] *loc. cit.*

[42] *Ibid.*, p. 30.

TABLE XV
EXPENDITURES FOR HIGHER EDUCATION, BY CONTROL:
UNITED STATES, 1953-54 TO 1973-74
(In billions of 1961-62 dollars)

Year	TOTAL EXPENDITURES			CURRENT EXPENDITURES			CAPITAL OUTLAY		
	Total	Public	Non-Public	Total	Public	Non-Public	Total	Public	Non-Public
1953-54	$ 3.8	$ 2.2	$ 2.2	$ 3.1	$ 1.7	$ 1.4	$ 0.7	$ 0.5	$ 0.2
1954-55	4.3	2.4	1.9	3.5	1.9	1.6	0.8	0.5	0.3
1955-56	4.8	2.7	2.1	3.8	2.1	1.7	1.0	0.6	0.4
1956-57	5.4	3.1	2.3	4.3	2.4	1.9	1.1	0.7	0.4
1957-58	5.9	3.4	2.5	4.6	2.6	2.0	1.3	0.8	0.5
1958-59	6.4	3.7	2.7	5.1	2.9	2.2	1.3	0.8	0.5
1959-60	6.9	3.8	3.1	5.6	3.1	2.5	1.3	0.7	0.6
1960-61	7.3	4.2	3.1	5.9	3.3	2.6	1.4	0.9	0.5
1961-62	8.0	4.6	3.4	6.4	3.6	2.8	1.6	1.0	0.6
				ESTIMATED					
1962-63	8.7	5.2	3.5	7.0	4.0	3.0	1.7	1.2	0.5
1963-64	9.3	5.6	3.7	7.6	4.4	3.2	1.7	1.2	0.5
1964-65	10.2	6.2	4.0	8.2	4.8	3.4	2.0	1.4	0.6
1965-66	11.2	6.7	4.5	9.0	5.3	3.7	2.2	1.4	0.8
1966-67	12.3	7.4	4.9	9.8	5.8	4.0	2.5	1.6	0.9
1967-68	12.8	7.8	5.0	10.6	6.3	4.3	2.2	1.5	0.7
1968-69	13.2	8.0	5.2	11.3	6.7	4.6	1.9	1.3	0.6
1969-70	13.6	8.4	5.2	12.0	7.2	4.8	1.6	1.2	0.4
1970-71	14.2	8.8	5.4	12.6	7.6	5.0	1.6	1.2	0.4
1971-72	15.0	9.4	5.6	13.2	8.0	5.2	1.8	1.4	0.4
1972-73	15.8	9.9	5.9	13.9	8.5	5.4	1.9	1.4	0.5
1973-74	16.5	10.4	6.1	14.6	9.0	5.6	1.9	1.4	0.5

Source: Projections of Educational Statistics to 1973-74, (Washington, D. C.: U. S. Department of Health, Education, and Welfare, 1964), Table 21, pp. 31-32.

to insure, on the one hand, that no able but needy student is deprived of educational opportunities, and, on the other hand, that students in favorable financial position pay a sufficient share of educational costs.

It seems certain that state governments, and, in many instances, local governments will be forced to increase substantially their financial support of higher education if the pressing needs for higher education are to be met. Furthermore, it appears from the recent federal legislation pertaining to higher education that the federal government will play a larger role in the financing of higher education in the future.[43]

Coordination of Higher Education

The increasing complexity of the structure of higher education, the mounting expenditures for this function, and the bulging enrollments and wide diversity of programs needed make state-wide coordination of higher education imperative. A multitude of administrative problems has arisen as a result of these changes, and it has become increasingly apparent that state-wide planning and coordination of all institutions of higher education are necessary if a state is to provide a full complement of needed educational programs with available resources.

The organization and administration of public higher education within the individual states today are undergoing review and revision. The process is aimed at devising a workable arrangement for administering an expanding and diverse system of public higher education institutions. To a degree, it may be asserted that higher education today finds itself in a position similar to that confronting public school education during the late 1800's and the early part of the 1900's. During that time, the elementary and secondary schools were in the process of moving from semi-autonomous local units into a system coordinated by an overall State Board of Education. Today, we have a locally controlled, state-coordinated system of public elementary and secondary education that is generally understood and universally accepted.[44]

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[43] President's Committee on Education Beyond the High School, Second Report to the President, Washington, D. C., July, 1957, pp. 13-14.

In most states each public post-high school institution has operated for many years on an individual basis. Each has its own board of trustees to which the state granted wide autonomous powers. This procedure was consistent with the times and primary purpose of the institution. However, new demands on higher education and the proliferation of a host of new kinds of post-high school institutions have led to a recognition of the need for state higher education boards that have a primary concern for planning, programming, and coordinating rather than for governing and managing a single institution that is offering a traditional and well-recognized program.

Recognition of the need for state-wide coordination of higher education can be seen from the fact that seven states created state-wide coordinating boards. In the period 1950 to 1959 four other states created coordinating boards which also have some governing powers over institutions. Several of these were in the Rocky Mountain Region: namely, the Utah Coordinating Council of Higher Education (1959), the New Mexico Board of Education Finance (1951), and the Colorado Commission on Higher Education (1965).

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[44] State Boards Responsible for Higher Education (Washington, D. C.: U. S. Department of Health, Education, and Welfare, 1960), p. 8.

Summary

The next 10 years seem destined to be a decade of decisions for American higher education. Questions about the future of higher education require answers from American society. For whom will college education be provided? How will higher education be financed? How will it be organized? What are the desirable relations of higher education to the state? What curricula can best meet the hopes of talented youth and the needs of our times? What do we teach the average or slow learner? What do Americans expect higher education to contribute to the future of America?

These are questions of broad social policy. How we answer them will greatly affect our future well-being.

CHAPTER IV

PROBLEMS OF HIGHER EDUCATION IN WYOMING

Wyoming faces challenges to its higher education system similar to those of other states in the union. It is at once confronted with growing college enrollments and with the need to extend post-high school opportunities to more of its youth and adults. It is faced with questions of what to teach in light of the dramatic changes in the world and the transformation of the state as well as with increasing demands for services and research from its institutions of higher learning. As a result of these problems, Wyoming faces the basic questions of how best to organize, finance, and coordinate a state system of post-high school educational institutions capable of meeting these new needs.

An appraisal of these challenges, plus a comprehensive look at what the state's colleges are presently doing, is necessary to determine whether the programs of public higher education are serving adequately the needs of a rapidly changing society and the youth who depend so heavily upon higher education for a suitable formal preparation for life. This chapter will examine the challenges to the state's post-high school educational system. The next chapter will examine the present programs available in the state.

Growing Enrollments

College enrollments in Wyoming, as in the nation, have increased dramatically since World War II: growing from a total of 1,078 in the fall of 1945, to 9,009 in the fall of 1965, more than an eight-fold increase in the 20-year period. The growth of each of Wyoming's colleges is shown in Table XVI.

TABLE XVI

ACTUAL AND PROJECTED ENROLLMENTS IN WYOMING'S HIGHER EDUCATIONAL INSTITUTIONS FALL ENROLLMENTS, 1945 TO 1970

Year	University	Casper	Powell	Sheridan	Torrington	Rock Springs	Total
1945	1,005	73	---	---	---	---	1,078
1946	3,024	289	75	---	---	---	3,388
1947	3,381	245	103	---	---	---	3,729
1948	3,295	203	99	72	29	---	3,698
1949	3,203	216	70	108	48	---	3,645
1950	2,648	180	61	85	41	---	3,015
1951	2,316	173	70	74	21	---	2,654
1952	2,438	243	92	88	16	---	2,877
1953	[illegible],291	239	119	78	36	---	2,763
1954	2,450	304	115	124	41	---	3,034
1955	2,718	401	148	134	43	---	3,444
1956	3,096	482	184	187	62	---	4,011
1957	3,408	553	190	171	80	---	4,402
1958	3,613	575	180	176	78	---	4,622
1959	3,722	596	190	186	97	---	4,791
1960	3,863	823	218	226	123	42	5,295
1961	4,344	811	253	275	133	46	5,862
1962	4,849	838	292	263	100	72	6,414
1963	5,370	977	304	285	113	92	7,141
1964	5,751	1,200	387	280	162	154	7,934
1965	6,351	1,409	522	341	198	188	9,009
1966	6,774	1,610	600	500	225	225	9,934
1967	7,299	1,850	700	600	275	260	10,984
1968	7,704	2,140	800	700	325	325	11,994
1969	8,178	2,240	900	750	350	400	12,818
1970	8,681	2,340	1,000	800	400	500	13,721

Source: Enrollment statistics and projections provided by each institution.

The growth of higher education was centered in the University of Wyoming from 1887 until World War II, when the first community college was established in Casper. Since the establishment of the five community colleges the percentage of the college age group (18 to 21) enrolled in higher education in the state has increased greatly. As can be seen from Table XVII, in 1940 6.4 percent of Wyoming's youth 18 to 21 attended the University or one of the state's colleges. By 1965 the percentage had grown to an estimated 22.4 percent. The percentage of youth 18 to 24 attending one of the state's institutions of higher education is also shown in Table XVII since many youth, because of one reason or another, e.g. military service, graduate training, etc., will continue their education past their 21st birthday. The percentage of 18 to 24 year old group in Wyoming schools increased from 4.6 in 1940 to 16.9 in 1965. With the continued emphasis on higher education, and as it becomes more difficult for Wyoming students to enroll in out-of-state colleges, an even larger percentage of the state's college age youth can be expected to attend Wyoming schools.

TABLE XVII
ESTIMATED PERCENTAGE OF WYOMING COLLEGE AGE YOUTH ATTENDING WYOMING COLLEGES: 1940, 1950, 1960, 1965

Year	Wyoming Population 18 to 21 years of age	Number of youth 18 to 21 attending Wyoming Colleges	Percentage of youth 18 to 21 attending Wyoming Colleges	Wyoming Population 18 to 24 years of age	Number of youth 18 to 24 attending Wyoming Colleges	Percentage of 18-24 year olds attending Wyoming Colleges
1940	19,676	1,252	6.4	33,488	1,549	4.6
1950	19,635	1,489	7.6	33,590	1,983	5.9
1960	15,767	3,147	20.0	24,071	3,687	15.3
1965	22,517	5,041	22.4	36,174	6,124	16.9

Source: Estimates of figures from Statistical Summary, University of Wyoming, 1940, 1950, 1960 and 1965. Original data from community colleges.

The number and percentage of Wyoming high school seniors enrolling for the first time in Wyoming colleges have increased in the past few years and are expected to continue to increase through 1970. Table XVIII shows the increased enrollment in Wyoming colleges by Wyoming high school graduates.

TABLE XVIII
ESTIMATED PERCENTAGE OF WYOMING HIGH SCHOOL GRADUATES ATTENDING WYOMING COLLEGES: 1955-1965

Year	Wyoming High School Seniors	Number First Time Enrolled at U.W.	Percentage Enrolled at U.W.	Number First Time Enrolled in Wyoming Community Colleges	Percentage Enrolled at Wyoming Community Colleges	Percentage Enrolled either at U.W. or in Community Colleges
1955-56	3,132	637	20.34	N.A.	N.A.	N.A.
1956-57	3,309	702	21.21	N.A.	N.A.	N.A.
1957-58	3,755	691	18.40	N.A.	N.A.	N.A.
1958-59	3,446	752	21.82	N.A.	N.A.	N.A.
1959-60	3,540	630	17.80	N.A.	N.A.	N.A.
1960-61	4,003	713	17.81	N.A.	N.A.	N.A.
1961-62	4,200	900	21.43	873	20.79	42.21
1962-63	4,121	835	20.26	853	20.70	40.96
1963-64	4,029	831	20.63	968	24.03	44.65
1964-65	4,409	888	20.14	1,250	28.35	48.49
1965-66	5,442	1,074	19.74	1,506	27.67	47.41

Source: Statistical Summary of the University of Wyoming for selected years and reports from community colleges.

Projections of future enrollments in Wyoming colleges show a continued growth. A total enrollment of 13,721 is expected by 1970--an increase of 4,742 students over 1965 enrollments. The University alone, it is predicted, will have an enrollment of 11,579 by the fall of 1975.[1] The enrollment statistics and projections for the University and the state community colleges are shown in Table XVI.

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[1] University enrollment projections to 1975 are shown as Appendix Figure 1.

Migration of Students

Despite this tremendous increase in college attendance in the state, many Wyoming youth go outside the state for their post-high school education. Statistics on the number of youth migrating to other states to continue their education unfortunately are not regularly compiled. In 1958, the Committee on Higher Education in Wyoming secured from a number of sources, including annual high school reports to the College of Education and answers to questionnaires from public school administrators, the data shown in Table XIX. It may be noted in columns three and five of this table that for the entire period from 1928 to 1956 an average of 14.4 percent of Wyoming high school graduates entered the University of Wyoming. For the period 1928-1953 an average of 12.8 percent of high school graduates went to college in states other than Wyoming. Columns five and six show the number of Wyoming high school graduates enrolling in college and the percentage of these students attending college outside of Wyoming. As can be seen, an average of 48.7 percent of Wyoming students attending college during the period 1928-1953 went outside of the state for their education.

Two major national studies of student migration patterns were undertaken in 1958 and 1963 by the American Association of Collegiate Registrars and Admission Officers and the United States Department of Health, Education, and Welfare.[2] Summaries of these studies showing the migration of students to and from Wyoming are shown in Table XX. Wyoming, as was shown, exported

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[2] Association of Collegiate Registrars and Admission Officers, Home State and Migration of American College Students, Fall, 1958 (Washington, D. C., 1958), and U. S. Department of Health, Education and Welfare, Residence and Migration of College Students, Fall, 1963 (Washington, D. C., 1963).

TABLE XIX

NUMBER OF HIGH SCHOOL GRADUATES WHO ENTERED THE UNIVERSITY OF WYOMING AND OTHER COLLEGES: 1947-1956

Year of Graduation	No. High School Graduates Entering University of Wyoming	% of High School Graduates Who Entered University of Wyoming	No. of Graduates Who Entered College Out-of-State	% of Graduates Who Entered College in Other States	No. of Wyoming High School Graduates Enrolled First Time in College (a)	% of Wyoming First-Time Enrolled College Student Attending College Out-of-State
1927-28	232	14.5	200	12.5	432	46.3
1928-29	185	11.5	252	15.6	437	57.7
1929-30	220	12.6	170	9.7	390	43.6
1930-31	178	9.3	215	11.2	393	54.7
1931-32	169	7.8	223	10.3	392	56.9
1932-33	175	7.5	208	8.9	383	54.3
1933-34	276	11.3	229	9.4	505	45.3
1934-35	320	12.9	277	11.2	597	46.4
1935-36	350	13.8	253	10.0	603	42.0
1936-37	342	14.0	316	13.0	658	48.0
1937-38	403	14.2	366	12.9	769	47.6
1938-39	467	15.3	485	15.8	952	50.9
1939-40	427	14.3	409	13.7	836	48.9
1940-41	437	14.2	418	13.6	855	48.9
1941-42	461	16.2	335	11.8	796	42.1
1942-43	183	6.9	251	9.4	434	57.8
1943-44	236	9.1	257	9.4	493	52.1
1944-45	293	12.6	273	11.7	566	48.2
1945-46	500	20.6	363	14.9	863	42.1
1946-47	487	17.8	389	14.3	876	44.4
1947-48	458	17.3	421	15.9	879	47.9
1948-49	456	17.7	368	13.7	824	44.7
1949-50	372	14.0	458	14.3	830	55.2
1950-51	498	18.0	423	15.3	921	45.9
1951-52	527	20.1	473	17.9	1000	47.3
1952-53	495	17.8	444	16.0	939	47.3
1953-54	449	16.3				
1954-55	464	16.2				
1955-56	577	18.6				
1956-57	541	18.7				

Source: Committee on Higher Education, Report of the Committee on Higher Education to President G. D. Humphrey and Members of the Board of Trustees of the University of Wyoming (Laramie: University of Wyoming, 1958), p. 68.

(a) Computed from d[illegible] in original table.

TABLE XX

MIGRATION OF WYOMING RESIDENTS TO ATTEND COLLEGE IN OTHER STATES: 1958 AND 1963

Year and Type of Study	Total Students Enrolled, All Institutions in Wyoming	Total Residents of State Attending Institutions in:		In Migration	Out Migration	Net Migration + In - Out	% State Res. Attending College in Other States
		All States	Wyoming				
UNDERGRADUATE STUDY							
1958	4,299	5,475	3,643	656	1,832	-1,176	33.5%
1963	6,457	7,161	5,005	1,452	2,156	- 704	30.2%
GRADUATE STUDY							
1958	352	438	226	126	212	- 86	48.2%
1963	632	619	295	337	324	+ 13	52.3%
PROFESSIONAL STUDY							
1958	59	226	55	4	171	- 167	75.7%
1963	75	211	45	30	166	- 136	78.7%
ALL STUDENTS							
1958	4,710	6,139	3,924	786	2,215	-1,430	36.1%
1963	7,164	7,991	5,345	1,819	2,646	- 827	33.1%

Source: Home State and Migration of American College Students, Fall, 1958 (Washington, D. C.: American Association of Collegiate Registrars and Admissions Officers, 1958); Residence and Migration of College Students, Fall, 1963 (Washington, D. C.; U. S. Department of Health, Education and Welfare, 1963.

more of its residents to pursue higher education in other states than it imported in both 1958 and 1963. In 1958 a total of 2,215 Wyoming residents were in attendance in colleges outside of the state. This amounted to 36 percent of Wyoming residents attending college in that year. In 1963 2,646 of 7,991 Wyoming college students, or 33 percent, went to college outside of the state. Percentagewise, more professional students migrated out of the state than graduate or undergraduate students. A breakdown of Wyoming residents pursuing undergraduate, graduate, and professional studies in other states is also shown in Table XX.

The number and percentage of non-resident students attending the University of Wyoming and the state's community colleges have increased in recent years as can be seen from Tables XXI and XXII. Despite this increase, it appears from available data that more Wyoming youth migrate to other states to obtain a college education than out-of-state students migrate to Wyoming.

Statistics on the number of Wyoming youth migrating to other states for post-high school occupational education are not available. To obtain information on the number of Wyoming youth migrating to other states for occupational training, a survey was made. A questionnaire was sent to admission officers for information on sub-baccalaureate occupational type programs in the region. Trade, technical, vocational, business and non-degree nursing institutions in eight states, Arizona, Colorado, Idaho, Montana, New Mexico, South Dakota, Nebraska and Utah, were asked how many Wyoming residents attended their institutions during the academic year 1964-65.[3] The findings, summarized in Table XXIII show that 434

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[3] Names of the various vocational schools were obtained from Clarence E. Lovejoy, Lovejoy's Vocational School Guide (N.Y.: Simon and Schuster, 1963).

TABLE XXI

RESIDENT AND NON-RESIDENT STUDENTS AT THE UNIVERSITY OF WYOMING FOR THE PERIOD 1944-45 TO 1964-65

Year	Total Students	Resident		Non-Resident	
		Number	Per Cent	Number	Per Cent
1944-45	863	740	85.7	123	14.3
1945-46	1,005	840	83.6	165	16.4
1946-47	3,024	2,440	80.7	584	19.3
1947-48	3,685	2,777	75.4	908	24.6
1948-49	3,608	2,659	73.7	949	26.3
1949-50	3,529	2,651	75.1	878	24.9
1950-51	2,936	2,320	78.3	616	21.7
1951-52	2,531	1,985	78.4	546	21.6
1952-53	2,588	2,035	78.6	553	21.4
1953-54	2,531	1,996	78.9	535	21.1
1954-55	2,450	1,965	80.2	485	19.8
1955-56	2,718	2,166	79.7	552	20.3
1956-57	3,096	2,495	80.6	601	19.4
1957-58	3,408	2,648	77.7	760	22.3
1958-59	3,613	2,863	79.2	750	20.8
1959-60	3,722	2,869	77.1	853	22.9
1960-61	3,863	2,925	75.7	938	24.3
1961-62	4,344	3,215	73.9	1,129	26.1
1962-63	4,849	3,368	69.4	1,481	30.6
1963-64	5,370	3,682	68.6	1,688	31.4
1964-65	5,751	3,919	68.1	1,832	31.9

Source: Director of Registration and Admissions, University of Wyoming Bulletin. Laramie: University of Wyoming. (Data taken from the years 1944-45 to 1964-65, pages differ in each issue.)

TABLE XXII

RESIDENT AND NON-RESIDENT STUDENTS AT WYOMING'S COMMUNITY COLLEGES 1960-61 to 1965-66

	CASPER COLLEGE			NORTHWEST COMMUNITY COLLEGE			SHERIDAN COLLEGE[a]		
Year	In Dist.	Out of Dist.	Out of State	In Dist.	Out of Dist.	Out of State	In Dist.	Out of Dist.	Out of State
1960-61	N.A.	N.A.	N.A.	101	132	16	226	a	a
1961-62	N.A.	N.A.	N.A.	108	138	25	275	a	a
1962-63	522	185	32	138	126	41	263	a	a
1963-64	566	209	50	129	134	47	285	a	a
1964-65	728	326	50	130	204	79	280	a	a
1965-66	1,058	443	93	165	275	116	341	a	a

	GOSHEN COUNTY COMMUNITY COLLEGE[b]			WESTERN WYOMING COMMUNITY COLLEGE		
Year	In Dist.	Out of Dist.	Out of State	In Dist.	Out of Dist.	Out of State
1960-61	123	b	b	--	--	--
1961-62	133	b	b	--	--	--
1962-63	100	b	b	72	--	--
1963-64	113	b	b	91	--	--
1964-65	162	b	b	154	35	10
1965-66	198	b	b	177	24	11

[a] Information not given; only total day student enrollment shown, no breakdown as to residence shown.

[b] Information not given; about 10 percent of student body comes from counties other than Goshen County; about 2½ percent are out-of-state students.

Wyoming students were attending occupational oriented types of schools in eight neighboring states. In addition, the colleges in the area were surveyed at this time, and it was found that 1,822 Wyoming residents were students in the universities and colleges of the region in 1964. Appendix B shows the number of Wyoming residents attending the various schools in the region.

TABLE XXIII
WYOMING STUDENTS IN ATTENDANCE IN
REGIONAL SUB-BACCALAUREATE OCCUPATIONAL SCHOOLS
1964-65*

Type of School		Number of Students
Barber and Beauty Schools		43
Business Schools		247
Nursing Schools		59
Vocational and Technical Schools		77
Miscellaneous:	Arts	2
	Flight	6
Total		434

*Region includes the states of Arizona, Colorado, Idaho, Montana, New Mexico, South Dakota, Nebraska, and Utah.

Problems of What to Teach

The expansion of the higher educational enterprise in Wyoming has been accompanied by ceaseless effort to construct and reconstruct a curriculum to meet the needs of modern life. The facts of our 20th century life, a rapidly changing society, a mounting store of knowledge, and the increased demands for a highly educated work force, create some basic problems relating to instructional programs in our post-high school institutions.

The problem of designing programs in Wyoming capable of meeting the diverse needs of its citizens is particularly difficult because of the small population, the great distances between population centers, and the nature of the economic activities within the state. It is difficult to provide a comprehensive curriculum including programs of liberal arts, graduate, professional, technical, and vocational because the state has neither sufficient student demand nor the required tax resources to support the construction and operation of all these high-cost educational facilities. These conditions, coupled with the growing demands for additional educational programs, create some major public questions for the state.

The University and the community colleges have attempted to meet the new and diverse demands for educational programs by increasing their course offerings. Over the past 10 years Wyoming colleges have greatly augmented their curricula. The University of Wyoming alone from 1945 to 1965 increased the number of subject areas in which a student may major from 70 to 123 and the total number of courses offered by the University has grown from 986 to 1,720. Masters degrees in 1965 were offered in 77 fields as compared with 24 fields in 1945. There are doctoral degrees offered in 20 fields as compared to four in 1945. Community college programs have expanded similarly. Table XXIV shows this growth of instructional programs being offered in Wyoming colleges in the years 1945 to 1965.

Despite the efforts to expand curricula of the colleges, Wyoming has been unable to support some educational programs. Professional training for members of the health professions, physicians, dentists, and veterinarians, is one major area that Wyoming does not support. Lack of educational opportunities in these areas was one of the motivating forces behind the creation of the Western Interstate Commission on Higher Education in 1951. The purpose of this compact, commonly called WICHE, is to increase the educational programs which may not be available in their home state. Under this program

TABLE XXIV

DEGREE PROGRAMS AND COURSES OFFERED
UNIVERSITY OF WYOMING
1945, 1950, 1960, 1965

College	Number of Courses Offered				Number of Full Majors Offered			
	1945	1950	1960	1965	1945	1950	1960	1965
AGRICULTURE								
General	--	--	--	5	2	3	3	4
Biochemistry	--	--	--	15	--	--	--	1
Agronomy & Ag. Economics	29	42	62	83	5	5	8	13
Vet. Science & Bacteriology	5	7	9	15	--	--	--	2
Animal Production	20	22	38	36	1	1	4	4
Home Economics	26	32	37	38	2	2	2	2
Wool	3	5	5	7	1	1	1	1
ARTS AND SCIENCES								
English, Speech & Theatre	67	109	119	143	3	4	4	6
Natural Sciences	169	251	267	250	10	11	13	19
Social Sciences	67	93	98	117	5	7	7	8
Music	59	59	77	76	4	4	5	5
Art	18	50	50	50	1	1	1	1
History & Geography	43	53	70	85	1	1	2	3
Mathematics	26	36	40	43	1	1	1	2
Languages	108	106	99	128	4	4	4	5
General	--	--	--	--	--	--	1	1
COMMERCE AND INDUSTRY								
Accounting	18	19	18	18	--	1	1	1
Business Administration	37	57	62	66	1	2	4	6
Secretarial Science	11	13	16	17	1	1	1	1
Statistics	10	11	16	18	--	1	1	1
General					--	1	1	1
Commerce-Law					--	--	1	1
EDUCATION								
Elementary	13	15	33	20	1	1	1	1
Secondary	52	63	81	87	11	11	13	14
Vocational	35	40	30	28	5	5	5	7
Administration	15	17	10	7	1	1	1	1
Guidance	--	13	15	16	--	1	1	1
Adult	--	--	12	9	--	1	1	1
General	--	12	27	31	--	1	1	1
ENGINEERING								
Civil & Architectural	33	48	63	73	2	2	2	2
Electrical	28	24	28	33	1	1	1	1
Mechanical	55	56	56	72	2	2	2	3
General	3	7	11	5	2	5	5	6
Petroleum	--	--	--	25	1	1	1	1
LAW								
Law	36	34	40	30	1	1	1	1
Pre-Legal	--	--	--	--	1	1	1	1
PHARMACY	--	20	32	48	--	--	1	1
NURSING	--	--	17	26	--	--	1	1
TOTALS					70			123

Source: University of Wyoming Catalogues.

Wyoming students may attend a professional school, such as a medical, dental, or veterinarian school, in another of the western states without having to pay the additional out-of-state tuition to attend this out-of-state institution. The home state of the student pays the difference between the in-state and out-of-state tuition. Through this plan qualified residents of the 13 western states may receive preference in admission and will pay in-state tuition in curricula which have been declared regional by colleges and universities.

Since the initiation of WICHE several additional programs have been included in this cooperative approach. In 1964 WICHE launched the Western Regional Student Program (WRSP), a plan whereby public institutions in the West may share specialized or unique curricula. The plan expands the number and variety of educational opportunities by making available to the young people of the western states a wide choice of programs, ranging from atmospheric science to watershed management, without the expenditure of additional state funds for the duplication of specialized staffs and costly facilities. It also assures more efficient use of educational resources and increases the supply of highly specialized manpower for the region.

Each participating institution decides which of its curricula it wishes to designate as regional programs. The institution then admits to these programs as many qualified students from the other WICHE states as it can accommodate. The qualified westerners are admitted on the preferential admission basis, that is, before equally qualified students from outside the region, and they are required to pay only in-state or resident tuition. The offerings under this Western Regional Student Program cover many of the areas of learning as can be seen in the listing found in Appendix Table VII. Wyoming has designated as regional programs adult education, American studies, educational administration, geology, guidance, microbiology, petroleum engineering, plant biochemistry, range management, wild life conservation, and wool technology.

Despite the increase in the number of educational programs available for Wyoming students, either in Wyoming institutions or in other western states through WICHE, there are growing demands for additional programs, particularly for technical and vocational education programs. Proposals to create a state technical-vocational school have been introduced in the past two sessions of the State Legislature. Although these measures were unsuccessful, several Wyoming cities have attempted to have area vocational schools created in their communities with funds from one of the new federal education acts. Two cities have held elections on the question of creating a junior college district.[4] One of these, the Fremont County election, passed on a new junior college. A new community college is being planned now for that area.

There are several reasons for the growing demands for technical-vocational education programs in the state. For one thing, as will be elaborated on in the next chapter, there are relatively few high school or post-high school programs to train persons in technical or vocational subjects in the state. There is also a growing awareness that more appropriate education is required by all adults. The labor force data, shown in Chapter III, clearly indicates that a larger percentage of our labor force now needs technical and vocational training, and in the future an even larger percentage of our citizenry must be technically trained.

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[4] A Cheyenne election was held to form a junior college. The proposal was defeated by the voters.

The need for additional technical-vocational and adult education programs may be seen also from the educational profile of the state shown in Table XXV. While the average number of years of school completed by Wyoming citizens is 12.1 years, 47,207 adults or 27.1 percent of adults 25 years and older have an eighth grade education or less. Another 31,765, or 18.2 percent, have less than a high school education.

In addition to these educationally handicapped persons, the dropout rate between the ninth and twelfth grades is about 30 percent in the state, and our college attrition rates are equally high with approximately 55 percent of the freshmen failing to complete the four-year program (see Table XXVI). Only about 25 percent of our college age youth are enrolled in the state's colleges. Of the remaining 75 percent of our youth, some receive occupational training in educational institutions in other states, some receive on-the-job training, and others are trained in the military service, but there is still too large a percentage of our young adults for whom there is no post-high school educational opportunity.

According to a 1964 study of the State Department of Education, 43.2 percent of the state's 1963 high school graduates took a college preparatory course but some 52.1 percent of the class entered college as a post-high school pursuit. The conclusion was made that perhaps the absence of the availability of post-high school technical-vocational schools was a factor in causing some nine percent of the graduates to enter college even though they had not pursued a college preparatory course of study in high school.[5] In light of the high attrition rate in college, this appears to be both a

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[5] A Study of the 1963 Graduates from Wyoming's Public High Schools (Cheyenne: State Department of Education, 1964), pp. 1-19.

TABLE XXV

EDUCATIONAL ACHIEVEMENT OF WYOMING CITIZENRY: 1960

	The State	%	Residence					
			Urban	%	Rural Nonfarm	%	Rural Farm	%
Level of School								
Persons 5 to 34 years old enrolled in school	86,766		48,723		26,161		11,882	
Kindergarten	4,787		3,315		1,259		213	
Elementary	55,618		30,225		17,499		7,894	
High School	20,211		10,397		6,485		3,329	
College	4,489		3,850		397		242	
Not Reported	1,661		936		521		204	
Highest Grade Completed								
Persons 25 years old and over	174,252		100,614		51,069		22,569	
No School years completed	1,298	0.7	625	0.1	547	0.1	126	0.1
Elementary: 1 to 8 years	47,207	27.1	24,350	24.2	15,213	30.0	7,644	33.9
High School: 1 to 3 years	31,765	18.2	17,062	17.0	10,609	20.8	4,094	18.1
4 years	52,886	30.4	31,619	31.4	14,612	28.6	6,655	29.5
College: 1 to 3 years	20,653	11.8	12,995	12.9	5,256	10.3	2,402	10.6
4 years or more	14,558	8.4	10,502	10.4	3,057	6.0	999	4.4
Not Reported	5,885	3.4	3,461	3.4	1,775	3.5	649	2.9

Source: U. S. Census of Population, Wyoming, 1960, prepared by U. S. Department of Commerce, Bureau of the Census.

TABLE XXV (Continued)

YEARS OF COLLEGE EDUCATION IN WYOMING AND NEIGHBORING STATES (25 years and older)[1]

	1940			1950			1960		
	Total	1 to 3	4 & Over	Total	1 to 3	4 & Over	Total	1 to 3	4 & Over
U.S.	74,775,836	4,075,184	3,407,313	87,884,631	6,282,595	5,304,337	91,856,910	8,742,070	7,625,273
Wyoming	136,725	12,275	6,963	157,505	17,355	11,240	174,252	21,426	15,084
Colorado	637,936	50,506	37,752	757,140	81,185	61,645	940,803	116,499	100,717
Nebraska	751,863	54,689	32,029	773,035	66,880	39,435	791,018	83,825	53,630
Montana	315,147	27,184	15,079	335,745	35,875	20,470	356,087	43,458	26,851
Utah	267,863	29,291	16,324	343,775	46,025	26,235	419,381	62,995	42,738
Idaho	274,871	26,504	12,185	314,065	35,570	17,130	340,412	42,395	24,483
Nevada	67,468	5,886	4,404	96,555	10,855	7,085	159,974	20,778	13,324

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[1] Figures from U. S. Census of Population, Wyoming, 1960, prepared by U. S. Department of Commerce, Bureau of the Census.

TABLE XXV (Concluded)

YEARS OF COLLEGE EDUCATION IN WYOMING AND NEIGHBORING STATES
(Percent of age group 25 years and older)[1]

	1940			1950			1960		
	Total	1 to 3	4 & Over	Total	1 to 3	4 & Over	Total	1 to 3	4 & Over
U. S.	10.0	5.4	4.6	13.1	7.1	6.0	17.8	9.5	8.3
Wyoming	14.1	9.0	5.1	18.1	11.0	7.1	21.0	12.3	8.7
Colorado	13.8	7.9	5.9	18.3	10.7	8.1	23.1	12.4	10.7
Nebraska	11.6	7.3	4.3	13.8	8.7	5.1	17.4	10.6	6.8
Montana	13.4	8.6	4.8	16.8	10.7	6.1	19.7	12.2	7.5
Utah	17.0	10.9	6.1	21.0	13.4	7.6	25.2	15.0	10.2
Idaho	14.0	9.6	4.4	16.8	11.3	5.5	19.7	12.5	7.2
Nevada	15.2	8.7	6.5	18.5	11.2	7.3	21.3	13.0	8.3

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[1] Figures from U. S. Census of Population, Wyoming, 1960, prepared by U. S. Department of Commerce, Bureau of the Census.

TABLE XXVI

THE UNIVERSITY OF WYOMING
AN ATTRITION SURVEY OF NEW FIRST-TIME FRESHMEN*

Fall Semesters	Enrolled from Wyo. Hi. Sch.	Attrition for											
		2nd Sem.		3rd Sem.		4th Sem.		5th Sem.		6th Sem.		7th Sem.	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1959-60	630	101	16.0	258	41.0	281	44.6	338	53.7	356	56.5	376	59.7
1960-61	713	89	12.5	243	34.1	290	40.7	369	51.8	378	53.0	371	52.0
1961-62	900	130	14.4	360	40.0	401	44.6	476	52.9	483	53.7	494	54.9
1962-63	835	112	13.4	292	35.0	328	39.3	417	49.9	428	51.3	419	50.2
1963-64	831	131	15.8	332	40.0	369	44.4	418	50.3	437	52.6		
1964-65	888	132	14.9	344	38.7	399	44.9						
	Enrolled from non-Wyo. Hi.Sch.												
1959-60	223	36	16.1	106	47.5	117	52.5	134	60.1	136	61.0	150	67.3
1960-61	268	37	13.8	115	42.9	125	46.6	162	60.5	164	61.2	170	63.4
1961-62	307	43	14.0	133	43.3	148	48.2	179	58.3	186	60.6	193	62.9
1962-63	441	65	14.7	178	40.4	199	45.1	241	54.7	251	56.9	253	57.4
1963-64	415	56	13.5	167	40.2	182	43.9	229	55.2	238	57.4		
1964-65	452	70	15.5										
	Enrolled from All H.S.												
1959-60	853	137	16.1	364	42.7	398	46.7	472	55.3	492	57.7	526	61.7
1960-61	981	126	12.8	358	36.5	415	42.3	531	54.1	542	55.3	541	55.2
1961-62	1,207	173	14.3	493	40.8	549	45.5	655	54.3	669	55.4	687	56.9
1962-63	1,276	177	13.8	470	36.8	527	41.3	658	51.6	679	53.2	672	52.7
1963-64	1,246	187	15.0	499	40.1	551	44.2	647	51.9	675	54.2		
1964-65	1,340	202	15.1	547	40.8	627	46.8						

*Does not include Specials, Veterans and Foreign Students, without high school averages.
July 26, 1965. Archie V. Johnson, University Statistician
Data obtained from the records in the Division of Admissions and Records.
Source: University Statistician, Archie Johnson.

tragedy to the youth who fails in college and a waste of public resources for not offering programs designed to meet the needs of these youth and society.

If Wyoming's citizenry is to keep up with the increasing educational requirement of our society, we are going to have to educate a larger percent of our people in the new technical-vocational areas. More adult education programs also are needed if our people are to be able to deal effectively with the rapid changes that are occurring in the economy.

Where to Teach Occupation Education

Recognition of the need for additional programs in the technical and vocational areas has raised the question of where these programs should be taught. Throughout the nation there is no single pattern for offering these programs, as was seen in Chapter III. A variety of institutions including adult education programs in public schools, area technical-vocational schools, community colleges, technical institutes, as well as four-year colleges, are teaching post-high school occupational courses. Where to teach these programs in Wyoming is greatly complicated because of the great distances between population centers, the sparse population, and a relatively limited tax base to support a post-high school educational system.

A number of suggestions has been made to meet these needs in the state. In 1957, the director of the University Personnel and Guidance Division published a study entitled, "The Need for Non-Degree Programs at the University." It recommended the creation of a special administrative division at the University to develop and to teach non-degree curricula suitable to the needs of those desiring instruction beyond high school but who are unable or do not care to pursue a degree program.

A similar recommendation was made by the Committee on Higher Education in Wyoming in 1958.[6] It recommended that the University develop a number of courses and programs for students not working for a degree, and that more attention be given to non-degree programs in both the University and the community colleges.

A series of policies pertaining to post-high school education in the state were proposed in 1962 by a state-wide higher education policy committee consisting of persons from the community colleges, the University, and the State Department of Education. One of the policies was that cooperative efforts would be made to build comprehensive state-wide vocational-technical programs in the community colleges, and that the University would offer specialized vocational-technical programs where its personnel, resources, and facilities merit such offerings.[7]

In addition to these proposals there have been attempts by several cities to have technical-vocational schools created in their communities. It was proposed, both in the 1963 and 1965 sessions of the State Legislature, that a technical institute be established at the State Fair Grounds in Douglas. Also, Newcastle, Worland, Thermopolis, and Cheyenne have attempted to have area vocational schools created in their communities under the federal technical-vocational education act of 1963. Most of this discussion was based upon the hope of obtaining funds from the federal government; however, the State Department of Education designated in 1966 the community colleges as the area schools to receive these funds.

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[6] Committee on Higher Education in Wyoming, Report to President G. D. Humphrey, op. cit., pp. 244-245.

[7] State Wide Policies for Wyoming Institutions of Higher Education (Community College Commission, 1962).

Addition of a thirteenth year to the public school program is still another proposal that has been made to provide occupational types of education programs. Several major objections, however, have been made to this suggestion. A number of public school officials have stated that attempting such a program might endanger their main tasks of teaching children and youth. The fact that none of the school districts in the state are levying the permissive tax levy for adult education purposes tends to bear out this criticism. Furthermore, it is pointed out that most of the state's high schools' vocational education programs are inadequate.[8] There are few well-equipped shops in the state, and most of our schools are too small to provide adequate staff or equipment for adult vocational classes.

Still another proposal has been to broaden WICHE to encompass technical and vocational training programs. Under this program, Wyoming students would be able to attend technical-vocational schools in neighboring western states without paying out-of-state tuition.

There are still relatively few technical-vocational education programs in the state despite the growing recognition of its need and despite the various proposals for providing this type of program. A number of reasons seem responsible for this situation. For one thing, technical-vocational education is one of the most expensive types of education to offer, and this has prevented its addition to the educational curriculum in some institutions. Furthermore, there are relatively few employment opportunities for technically trained personnel in Wyoming.

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[8] Vocational Education in Wyoming: Where it is. Where it must go. Survey Report (Cheyenne: State Department of Education, 1962), pp. 1-95.

Many of the youth we might train in these areas would have to migrate to other states to find employment. Perhaps the most serious problem is the low status in which technical-vocational training is held by many of our people. In fact, it seems that the University and, to some degree, the community colleges have not developed occupational oriented programs because these programs have little status. The net result of these problems is that Wyoming has not yet developed a comprehensive technical-vocational program for its citizenry. Wyoming is still faced with the difficult question of where to teach occupational education, and an answer to this question requires a reappraisal and a definition of the roles of each of its institutions of higher education. The University of Wyoming, under the direction of Dr. John Fey, has completed one phase of such a task. In January, 1966, a committee completed the task of formulating a long range academic plan. Complete information can be obtained from Academic Plan for the University of Wyoming, 1965-1975, published by the University.

Increasing Demands for Services and Research

The complete story of the increasing demands on our University and community colleges is not told by the statistics of growing enrollments and expanding curricula. Public demand is increasing rapidly for more of everything our colleges and universities produce, including more and different types of instructional programs, public services, and research.

Considerable instructional work is carried on in addition to teaching college students on the campus during the academic year; summer school, field summer schools, extension classes, and correspondence work are offered. The increasing demand for instruction to off-campus groups is indicated by such comparisons as the following. In 1945-46 there were 585 bookings for the University film library. In 1965-66 there were 9,541 bookings. In 1945-46 some 243 students were enrolled in correspondence courses. In 1965-66 there were 1,644. In 1945-46 some 340 students were in credit extension courses. In 1965-66 there were 2,007. In 1945 summer school enrollment totaled 2,155, and in 1965-66 it was 4,173. Similar demands have been made on community colleges as can be seen in Table XXVII. Evening classes have been expanded in all of the colleges, and a host of other community educational services, ranging from sponsoring symphony orchestras to conducting reading clinics for the community, is sponsored by the colleges.

TABLE XXVII
ESTIMATED NUMBER OF EVENING AND EXTENSION COURSES SPONSORED BY WYOMING COMMUNITY COLLEGES, 1965-66

Colleges	Number of Evening Courses for Regular Credit	Number of Evening Courses for No Credit*
Casper	117	86
Northwest	5	8
Sheridan	5	7
Western Wyoming	12	25
Goshen	5	9

*Adult education courses, vocational and cultural programs, and other courses not leading to a degree.

The University and the community colleges also are called upon to provide a host of services. A small sample of the growing service functions performed by the University and community colleges is as follows: seminars for state and local governmental officials; community development workshops; agricultural demonstration programs; civil defense training; technical information programs for business; school surveys; legal and clinical advice for indigent persons; consultant services with professional organizations; cultural programs, art shows, musical programs, and plays, throughout the state; civic programs such as Girls' State, 4-H Clubs and driver's education programs; operation of conference centers and summer camps; and a host of cooperative programs with the federal government.

Demands for research are also increasing.[9] As can be seen, funds have been expended by the University on this function over the past eight years (see Table XXVIII). Total expenditures on research at the University increased from $965,690.12 in 1957-58 to $1,545,608.00 in 1965-66. The University has some organized research units, namely Agricultural Experiment Stations, Arts and Sciences, Division of Basic Research, Division of Business and Economic Research, Natural Resources Research Institute, Research Council of the Graduate School, Biological Research Station, Soil Laboratories, Water Resources Research Institute, Adult Education Research Services, and Research and Publications Center of the College of Education. The scope of research has expanded greatly in recent years. Among the projects conducted in 1964-65 were the following: livestock production and marketing economics; biological and chemical control of weeds; control of the harvester ant, sheep nose botfly, and cattle face fly; water conservation; improvement of range land; control of important diseases of sheep and cattle; human nutrition; wheat breeding; biochemistry of selenium and herbrades; Wyoming's weather including cloud seeding; processing of phosphate rock; upgrading of the quality of heavy crude oil; uses of bentonite; coal research; fish biology; game management; soil fertility; Wyoming tax system; and the post-high school needs of Wyoming adults. In addition to these research projects, individual professors, not members of the organized research units, conducted research on numerous projects within their areas.

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[9] The state's organized research programs are centralized in the University of Wyoming, and little or no organized research is conducted at the community colleges.

Financing Higher Education in Wyoming

Financing higher education has become a major challenge to the state as a result of the growing college enrollments and the expanding service and research programs. Annual current operating expenditures of the state's institutions of higher education expanded from a total of $2,769,643.00 in 1947-48 to $14,297,666.22 in 1965-66, an increase of 416 percent in the 18-year period. Table XXVIII shows the current expenditures for these years.

TABLE XXVIII
EXPENDITURES FOR ORGANIZED RESEARCH AT
THE UNIVERSITY OF WYOMING:
FISCAL 1957-58 to 1968-69

Year	Amount
1957-58	$ 965,690.12
1958-59	1,048,292.05
1959-60	1,088,184.64
1960-61	1,072,187.40
1961-62	1,192,196.44
1962-63	1,221,051.78
1963-64	1,352,810.96
1964-65	1,418,160.00
1965-66	1,545,608.00
1966-67	1,677,660.00*
1967-68	1,799,020.00*
1968-69	1,940,396.00*

*Projected expenditures.

Much of the increase has been due to mounting college enrollments which grew 836 percent in this 18-year period compared with a rise in current operating expenditures of 416 percent. Greater emphasis on quality education and the constantly declining purchasing power of the consumer dollar also have been factors causing the greater spending.

During the period 1947-65, current instructional costs per full-time equivalent students at the University increased from $450 to $841, a growth of 87 percent. Instructional cost per student at the community colleges varied from college to college (see Table XXIX). The cost per student in the community colleges tends to be highest in the early years of the institutions and then declines as enrollments grow. Continued growth at a certain point then pushes up the per capita expenditures.

The largest single item of expenditures at all of the institutions of higher education was the cost of residential instruction, which is composed mostly of salaries for faculty. Faculties have increased at all of the institutions to serve the growing enrollments, and with continued growth in the future even larger staffs can be expected. Estimates by the presidents of the various institutions show that approximately 300 more faculty members will be needed by 1970 to serve the growing student bodies, assuming the same teacher-student ratio is maintained. The University alone will need 35 new faculty members each year until 1975 just to meet expanding enrollments, and another 40 to replace faculty retiring and leaving for other positions.[10] Table XXX shows the projected staff needs for all of the institutions of higher education in the state to 1970.

Recruiting and retaining competent teachers to serve the growing number of students is becoming increasingly difficult because of the tremendous demand throughout the United States for college teachers. The colleges of the nation find themselves in increasing competition for faculty members. Perhaps there is no labor market in the United States today more difficult to compete in than the one for able and qualified college professors. Wyoming must make every effort to compete favorably for these teachers and simultaneously to strive for higher levels of academic excellence.

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[10] Academic Plan for the University of Wyoming: 1965-1975 (Laramie: University of Wyoming, 1965), p. 29.

TABLE XXIX

CURRENT INSTRUCTIONAL COSTS PER EQUIVALENT STUDENT PER ACADEMIC YEAR 1947-1965

Year	University of Wyoming	Casper Community College	Northwest Community College	Sheridan College	Goshen County Community College	Western Wyoming Community College
1947-48	$ 450.00	$	$	$	$	$
1948-49	552.00					
1949-50	617.00					
1950-51	752.00	633.00	702.00	603.00	753.00	
1951-52	846.00	619.00	607.00	610.00	1,652.00	
1952-53	873.00	537.00	650.00	774.00	984.00	
1953-54	958.00	548.00	745.00	885.00	652.00	
1954-55	875.00	453.00	616.00	598.00	531.00	
1955-56	925.00	422.00	509.00	531.00	558.00	
1956-57	860.00					
1957-58	772.00					
1958-59	745.00					
1959-60	825.00					
1960-61	829.00					
1961-62	836.00	663.63	966.60	705.50	774.44	1,317.13
1962-63	818.00	656.79	892.30	819.72	1,080.00	1,757.53
1963-64	841.64	706.09	907.07	865.67	1,061.95	1,592.34
1964-65	840.49	691.98	852.58	859.68	774.69	1,058.45
1965-66	891.26	737.74	743.04	982.07	696.97	1,369.80
1966-67	943.52	---	---	---	---	---
1967-68	995.53	---	---	---	---	---
1968-69	1,053.50	---	---	---	---	---

Source: Data from 1947 to 1956 obtained from the Report of the Committee on Higher Education in Wyoming, 1958, pp. 192, 225, 226, 227, and 228. Later statistics obtained from the respective institutions.

Materials prepared by Archie Johnson, Lawrence G. Meeboer, M. Mundell, and Richard Long for the Board of Trustees, March 27, 1964, and by the community colleges.

TABLE XXX

CURRENT FUND EXPENDITURES IN WYOMING'S INSTITUTIONS OF HIGHER EDUCATION: 1947-1964

Year	University of Wyoming (Laramie)	Casper Community College	Northwest Community College (Powell)	Sheridan College	Goshen County Community College (Torrington)	Western Wyoming Community College (Rock Springs)
1947-48	$2,769,643.00					
1948-49	3,337,496.00					
1949-50	3,569,759.00					
1950-51	3,607,868.00	$ 134,117.00	$ 45,643.00	$ 39,806.00	$ 13,051.00	
1951-52	3,755,782.00	149,125.00	54,005.00	48,777.00	19,827.00	
1952-53	3,951,543.00	164,214.00	71,460.00	61,904.00	27,554.00	
1953-54	4,174,312.00	188,673.00	80,696.00	76,120.00	28,040.00	
1954-55	4,383,758.00	192,637.00	87,519.00	83,073.00	21,751.00	
1955-56	4,983,140.00	245,317.00	96,251.00	101,886.00	32,936.00	
1956-57	5,392,057.00					
1957-58	6,872,234.00					
1958-59	7,214,414.00					
1959-60	7,865,942.00					$ 50,757.93
1960-61	8,384,262.00					62,409.23
1961-62	8,806,130.00	541,518.34	264,550.00	194,012.99	103,800.00	64,539.23
1962-63	9,427,088.00	592,427.74	280,550.00	215,587.43	108,000.00	108,967.10
1963-64	10,598,590.00	742,096.55	295,750.00	246,716.78	120,000.00	132,166.34
1964-65	11,936,441.00	864,968.90	349,950.00	240,711.11	125,500.00	129,130.39
1965-66	11,985,404.43	1,207,683.00	387,868.00	334,885.79	138,000.00	243,825.00

Figures in this table include allocations for the University of expenditures for resident instruction, organized research, educational services, library, maintenance, operation and repair of plant, general administration and general expenses.

Source: University and community college statistics from 1947 to 1956 taken from the Report of the Committee on Higher Education in Wyoming, 1958, pp. 188, 225, 226, 227, and 228. Later statistics obtained from the respective institutions.

Although faculty salaries in Wyoming have increased considerably in recent years, comparative studies show that the average salaries at the University of Wyoming are substantially below national and regional averages in all academic ranks. A tabulation of some of these current studies showing how Wyoming compares with land grant colleges and state universities is shown in Tables XXXI and XXXII. Furthermore, the faculty benefits including retirement, health and group life insurance, leaves and travel funds, etc., are far below those offered by most comparable institutions.[11] The seriousness of the salary situation for the University was pointed out in President Fey's statement explaining the budget request to the 1965 Legislature. He stated that a large percentage of the 65 members of the residential instructional staff who left the employment of the University between July 1, 1963, and October 1, 1964, did so because they were offered better salaries elsewhere. He further warned that of perhaps greater concern than the large number of past resignations is the even larger number of resignations that we can look forward to in the future, since the salary increases were short of the national averages and our competitive position will further deteriorate before the 1967 legislative session.[12] The condition of the University is summarized in the Academic Plan as follows:

> In this era of keen competition for faculty, our choice is clear. Either we offer salaries comparable to those of other major universities or we will shortly have a faculty below average in training, intellect, and promise--and a university that can only provide Wyoming youth with an inferior educational opportunity.

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[11] Academic Plan for the University of Wyoming: 1965-1975, op. cit., pp. 30-31.

[12] President John Fey, Explanation of 1965-67 Legislative Program (Laramie: University of Wyoming, 1965), p. 39.

TABLE XXXI

SALARY DATA - FALL 1965
"The University of Idaho Study"

AVERAGE ANNUAL SALARY															
9 - 10 Month Basis								11 - 12 Month Basis							
Professors		Assoc Profs		Asst Profs		Instructors		Professors		Assoc Profs		Asst Profs		Instructors	
Code	Amount	Code	Amount	Code	Amount	Code	Amount	Code	Amount	Code	Amount	Code	Amount	Code	Amount
9	15,022	9	11,210	12	8,788	15	7,451	15	16,909	5	13,372	5	11,472	8	9,920
15	14,897	21	10,956	15	8,745	21	7,012	5	16,856	7	12,933	21	10,350	7	9,360
11	13,568	12	10,765	21	8,742	3	7,008	3	16,463	8	12,892	3	10,338	5	9,175
2	13,345	15	10,492	9	8,735	9	6,963	10	15,660	21	12,547	13	10,175	13	8,938
12	13,270	11	10,293	5	8,636	13	6,912	14	15,446	3	12,335	15	10,152	3	8,708
3	13,191	3	10,205	13	8,613	20	6,875	21	15,400	15	12,234	8	10,064	2	8,511
20	13,072	14	10,099	11	8,569	7	6,836	2	15,395	20	12,174	2	10,049	21	8,502
6	12,978	20	10,053	19	8,548	12	6,752	19	14,965	13	12,100	10	9,935	19	8,356
10	12,976	13	10,010	3	8,483	4	6,726	20	14,960	19	11,918	19	9,926	15	8,346
14	12,904	5	9,973	20	8,439	11	6,687	1	14,453	2	11,839	7	9,914	6	8,000
21	12,862	2	9,912	16	8,438	14	6,661	4	14,376	22	11,836	20	9,722	4	7,891
13	12,752	10	9,827	4	8,403	16	6,618	8	14,286	14	11,581	4	9,659	20	7,838
4	12,675	6	9,779	2	8,391	22	6,577	6	13,983	1	11,490	22	9,650	10	7,716
5	12,133	7	9,771	7	8,380	2	6,533	13	13,838	10	11,421	14	9,589	18	7,517
16	12,000	22	9,757	14	8,331	19	6,432	16	13,816	4	11,036	1	9,417	1	7,493
19	11,961	16	9,754	22	8,309	5	6,420	17	13,201	17	10,838	18	9,394	14	7,490
22	11,810	4	9,697	10	8,193	18	6,417	22	12,709	16	10,757	16	9,098	16	7,203
7	11,642	19	9,586	6	8,116	17	6,386	18	12,668	6	10,556	6	9,063	22	6,646
1	10,948	1	9,473	1	7,958	1	6,350	7	10,500	18	10,549	17	8,807	17	6,228
8	10,648	8	9,134	17	7,887	6	6,324	9	NR	9	NR	9	NR	9	NR
18	10,143	18	8,805	8	7,738	8	6,300	11	NR	11	NR	11	NR	11	NR
17	9,659	17	8,623	18	7,639	10	6,089	12	NR	12	NR	12	NR	12	NR
Ave.	13,014	Ave.	10,075	Ave.	8,433	Ave.	6,647	Ave.	15,057	Ave.	11,711	Ave.	9,840	Ave.	7,926

Code No.
1-Univ. of Idaho
2-Univ. of Arizona
3-Univ. of Nevada
4-Univ. of Wyoming
5- Texas A. & M. Univ.
6- Montana State Univ.
7- Univ. of North Dakota
8- Univ. of South Dakota
9- Univ. of Oregon
10- Univ. of Kansas
11-Univ. of Colorado
12-Univ. of New Mexico
13-Univ. of Utah
14-Oregon State Univ.
15-Washington State Univ.
16-Montana State Coll.
17-No. Dak. St. Univ.
18-So. Dak. St. Coll.
19-Kansas State Univ.
20-Colorado State Univ.
21-New Mexico State Univ.
22-Utah State Univ.

TABLE XXXII

FULL-TIME FACULTY SALARIES AND COMPENSATIONS:
1965-66
(Annual Report of the American Association of University Professors)

	ALL PUBLIC UNIVERSITIES			UNIVERSITY OF WYOMING		
Ranks	Average Compensation	Average Salary	Average Fringe Benefits	Average Compensation	Average Salary	Average Fringe Benefits
Professors	$ 15,077	$ 14,059	$ 1,018	$ 12,986	$ 12,530	456
Associate Professors	11,295	10,517	778	10,049	9,593	456
Assistant Professors	9,347	8,686	661	8,804	8,349	455
Instructors	7,129	6,626	503	7,166	6,729	437

July 29, 1966. Archie V. Johnson, University of Wyoming Statistician.

Average salaries of instructors in the Wyoming community colleges also are below the national average in public junior colleges. According to a National Educational Study for 1965-66, the medium salary in public junior colleges was $8,361.[13] The range of faculty salaries at Wyoming community colleges is shown in Table XXXIII. The lack of competitive position of salaries in Wyoming community colleges makes it difficult to recruit and hold qualified staff at these institutions.

Expenditures on capital improvements at Wyoming's institutions of higher education also have increased dramatically in the period 1947 to 1964. Over $27,412,254.73 have been spent on capital improvements during this period. To meet the building needs in the next two years, it is estimated that between $10 and $12 million will be needed at the University and the five existing community colleges will need between $12 and $14 million. This does not include the needs of any new colleges or schools which may be created. Table XXXIV shows the projections of capital needs for the University and the community colleges.

From the experience of the recent years and the projections of needs for the future, it can be seen plainly that Wyoming is going to have much greater costs for higher education in the future. The prospects of still greater costs raise some fundamental questions pertaining to the financing of the institutions. Furthermore, decisions about creating additional institutions and adding new curricula must be based on the fiscal capacity of the state to support such programs adequately.

Revenues to support the University and the state's community colleges come from several sources. The University relies upon five major revenue

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[13] Salaries in Higher Education, 1965-66 (Washington: National Education Association, 1966), p. 53.

TABLE XXXIII

SALARY RANGES IN WYOMING COMMUNITY COLLEGES: 1965-66

College	B.A.	M.A.	M.A. + 30	M.A. + 54	Doctorate
Casper College	$5,175-$6,900	$5,750-$8,510	$6,325-$9,085	$	$6,900-$9,660
Northwest Community College					
Sheridan College	$4,950-$5,445	$5,500-$9,295	$6,050-$9,845	$6,325-$10,120	$6,600-$10,395*
Goshen County Community College	$4,920-$5,544	$5,700-$8,100	$6,000-$9,000		$6,300-$9,600
Western Wyoming Community College	$6,700-$7,200	$7,000-$9,250	$7,300-$10,000	$7,600-$10,300	$8,000-$11,150**

*Sheridan College ranges are for an M.A. + 36, M.A. + 54, and M.A. + 72.

**Western Wyoming Community College includes a rank of M.A. + 30 and M.A. + 60.

TABLE XXXIV

PROJECTIONS OF CAPITAL EXPENDITURES FOR THE UNIVERSITY OF WYOMING AND THE COMMUNITY COLLEGES
1965-67

Year	University of Wyoming	Casper Community College	Northwest Community College	Sheridan College	Goshen County Community College	Western Wyoming Community College
1965-67	$ 852,772	$ 1,081,380(b)	$ 2,775,000	$ 700,000	(c)	$ 2,000,000(d)
1967-69	6,254,138	1,500,000(b)	1,600,000	1,250,000		
1969-71	8,507,000		1,100,000	500,000		
1971-73	14,421,950					
1973-75	5,063,500					
1975-77	4,778,000					
TOTALS	$39,877,360(a)	$ 2,581,380	$ 5,475,000	$ 2,450,000	N.A.	$ 2,000,000

(a) Academic Plan for the University of Wyoming, 1965-67, p. 107.

(b) Estimates for 1966-67, 1967-68, 1968-69, 1969-70, are based on the supposition that the bond issue to be presented to the electorate February, 1966, will carry.

(c) Need a building of approximately 40,000 square feet to accommodate student body through 1970.

(d) College needs an entire new campus. Cost of first stage will be approximately $2,000.000.

sources, excluding capital outlay and debt services: state appropriations, federal income, state land income, local income (student fees, sales, and services), federal oil, mineral royalties, and interest. The percentages of estimated income by source for the 1965-67 biennium are shown in Figure 22. Funds for capital outlays at the University are obtained from a number of sources: state appropriations, self-liquidating bonds, gifts, mineral royalties, and others. Table XXXV shows the percentage of funds for capital outlay obtained from each of these sources during the period 1947 to 1963.

Financing the community colleges is still predominantly a local matter although the state has made appropriations to the community colleges since 1957. The community colleges obtain funds from the local property tax and the motor vehicle tax, state appropriations, tuitions and fees, federal and state vocational funds, nurses' training program funds for the University, and miscellaneous sources. The amounts and percentages received from each source for 1964-65 are shown in Table XXXVI. Funds for capital improvements are obtained entirely from the sale of bonds or other building income, such as gifts and endowments. There are no provisions for state assistance for capital outlays.

Financial problems threaten to become much worse for the community colleges as enrollments and costs increase unless major changes are made in the manner of financing them. At present the tax levy for college purposes is limited to four mills. State aid, in comparison with state contributions in other states, bears only a small percentage of the fiscal load of these institutions. It appears evident that future financial requirements will force change in this method of financing our community colleges.

Figure 22
University of Wyoming
ESTIMATED REVENUE BY SOURCE
(Excluding Capital Outlay & Debt Service)
Comparison of Total by Percentages

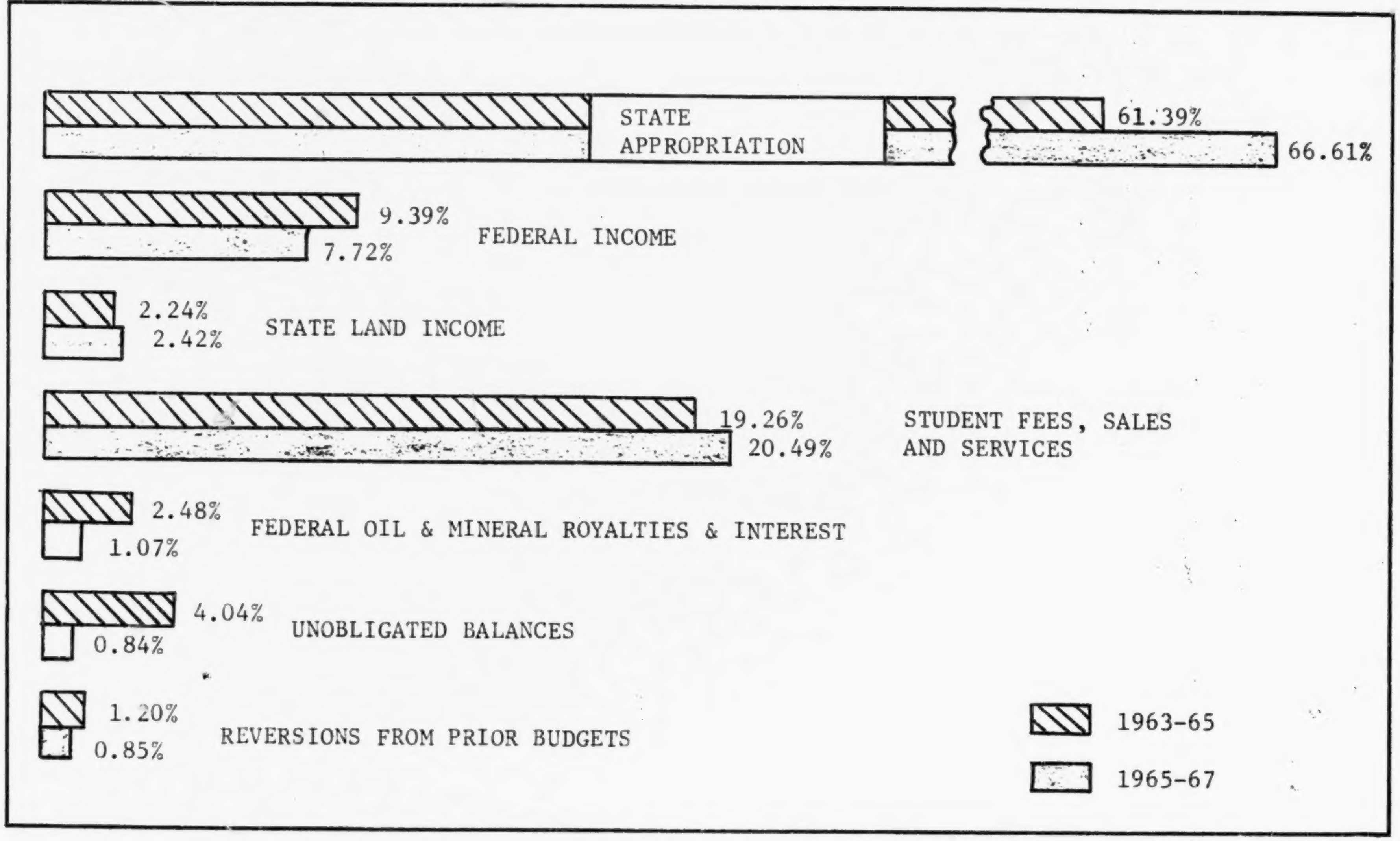

TABLE XXXV

UNIVERSITY OF WYOMING
EXPENDITURES FOR CAPITAL OUTLAY BY SOURCE OF FUNDS
July 1, 1947 to June 30, 1964

Fiscal Year	SOURCE AND PER CENT OF FUNDS							
	State Appropriations		Self-Liquidating Bonds		Gifts, Mineral Royalties and Others		Total	
	$	%	$	%	$	%	$	%
1947-48	550,101	83.2	---	-	110,965	16.8	661,066	100.0
1948-49	1,659,753	91.8	---	-	147,379	8.2	1,807,132	100.0
1949-50	1,265,248	61.5	514,524	25.0	278,563	13.5	2,058,335	100.0
1950-51	544,880	26.7	873,072	42.8	622,704	30.5	2,040,656	100.0
1951-52	628,058	64.6	9,037	0.9	335,586	34.5	972,681	100.0
1952-53	229,576	26.7	---	-	630,756	73.3	860,332	100.0
1953-54	118,056	48.2	---	-	127,078	51.8	245,134	100.0
1954-55	87	0.0	83,569	14.0	513,812	86.0	597,468	100.0
1955-56	3,763	0.4	292,777	34.4	555,079	65.2	851,619	100.0
1956-57	45,693	3.2	7,659	0.5	1,367,250	96.3	1,420,602	100.0
1957-58	29,805.11	3.5	479,922.95	57.0	332,404.88	39.5	842,132.94	100.0
1958-59	15,696.98	0.9	1,367,063.08	83.2	260,412.68	15.9	1,643,172.74	100.0
1959-60	---	-	2,668,953.62	85.5	453,383.40	14.5	3,122,337.02	100.0
1960-61	---	-	4,876,677.14	90.5	508,716.20	9.5	5,385,393.34	100.0
1961-62	---	-	2,905,623.12	90.0	323,508.20	10.0	3,229,131.32	100.0
1962-63	---	-	512,405.09	81.5	116,592.60	18.5	628,997.69	100.0
1963-64	---	-	949,187.71	90.7	96,876.97	19.3	1,046,064.68	100.0
Totals	5,090,717.09	18.6	15,540,470.71	56.7	6,781,066.93	24.7	27,412,254.73	100.0

TABLE XXXVI

SOURCES OF INCOME FOR WYOMING'S COMMUNITY COLLEGE, BY AMOUNT AND PERCENTAGE: 1964-65

Source of Income	Casper Community College		Northwest Community College		Sheridan College[a]		Goshen Co. Community College		Western Wyoming Community College	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
Property Tax	$483,973.75		$227,598.50		$147,000.00		$ 49,500.00		$ 75,303.00	
Motor Veh. Tax	42,426.42		5,300.00				5,000.00		5,351.00	
State Approp.	164,642.29		70,000.00		70,000.00		41,000.00		30,850.00	
Fed. & State Aid, Voc.	40,764.00									
U.W. Ext. Div.			1,732.26							
Tuition & Fees	150,721.22		43,200.00		59,000.00		20,500.00		13,000.00	
Collection other than tax sources	403,935.42								9,360.00	
Nurses' Training, U.W.	30,907.00				22,000.00					
Misc. Sources	16,900.86				2,500.00		336.59		2,800.00	
Cash Carry Over	140,055.45		27,369.24		34,385.79		15,663.41			
TOTAL REVENUE	1070,390.87		375,200.00		334,885.79[a]		132,000.00		136,664.00	

[a] Data for 1965-66.

Several alternative methods of financing community colleges are possible. The state may be redistricted to give community colleges larger tax bases; the mill levy limitations may be removed permitting heavier levies; or the state may assume greater responsibilities for financing these institutions. Also as building needs push capital expenditures higher, there will probably have to be new sources of revenues for this purpose.

In a recent study undertaken for the Wyoming Community College Commission by Dr. George L. Hall, an educational consultant, the following recommendations were made regarding financing Wyoming's community colleges:

> It is recommended that the state increase their share of the cost of operating the five community colleges by authorizing any community college district recognized by the Wyoming Community College Commission to claim apportionment of $400 for each FTE student computed as of October 1 for each year up to a total of 1,000 students and $350 per FTE student for each FTE student in excess of 1,000 students.

It is recommended that the state share capital costs for community college building.[14] This report also recommended that the minimum requirements for the creation of a community college district be raised to $100 million and a student enrollment of 2,500 in grades 9 through 12.

The growing costs of higher education in the state force constant review of the tuition policies at the University and the community colleges. Tuitions, as can be seen from Figures 23 and 24, have been increased at all of these institutions in recent years. Resident and non-resident fees at the University of Wyoming for the academic year 1944-45 were $79.50 and $147.00, respectively. A decade later, in 1954-55, the resident student was

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[14] Recommendations for the Financing and Coordination of Wyoming's Community Colleges, report prepared by Dr. George L. Hall, for the Wyoming Community College Commission, July, 1966.

Figure 23
UNIVERSITY RESIDENT TUITION AND OTHER REQUIRED FEES
1955-1966

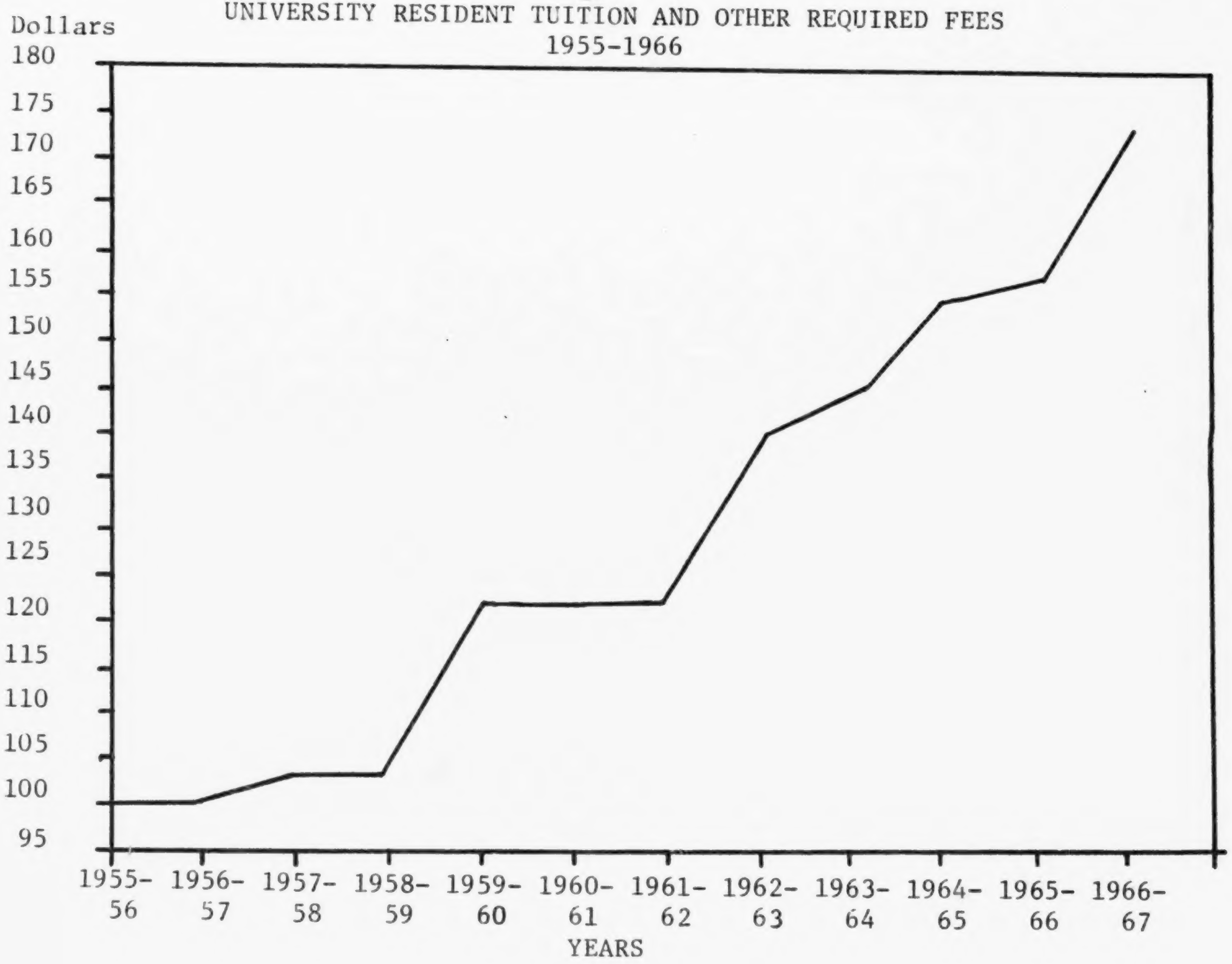
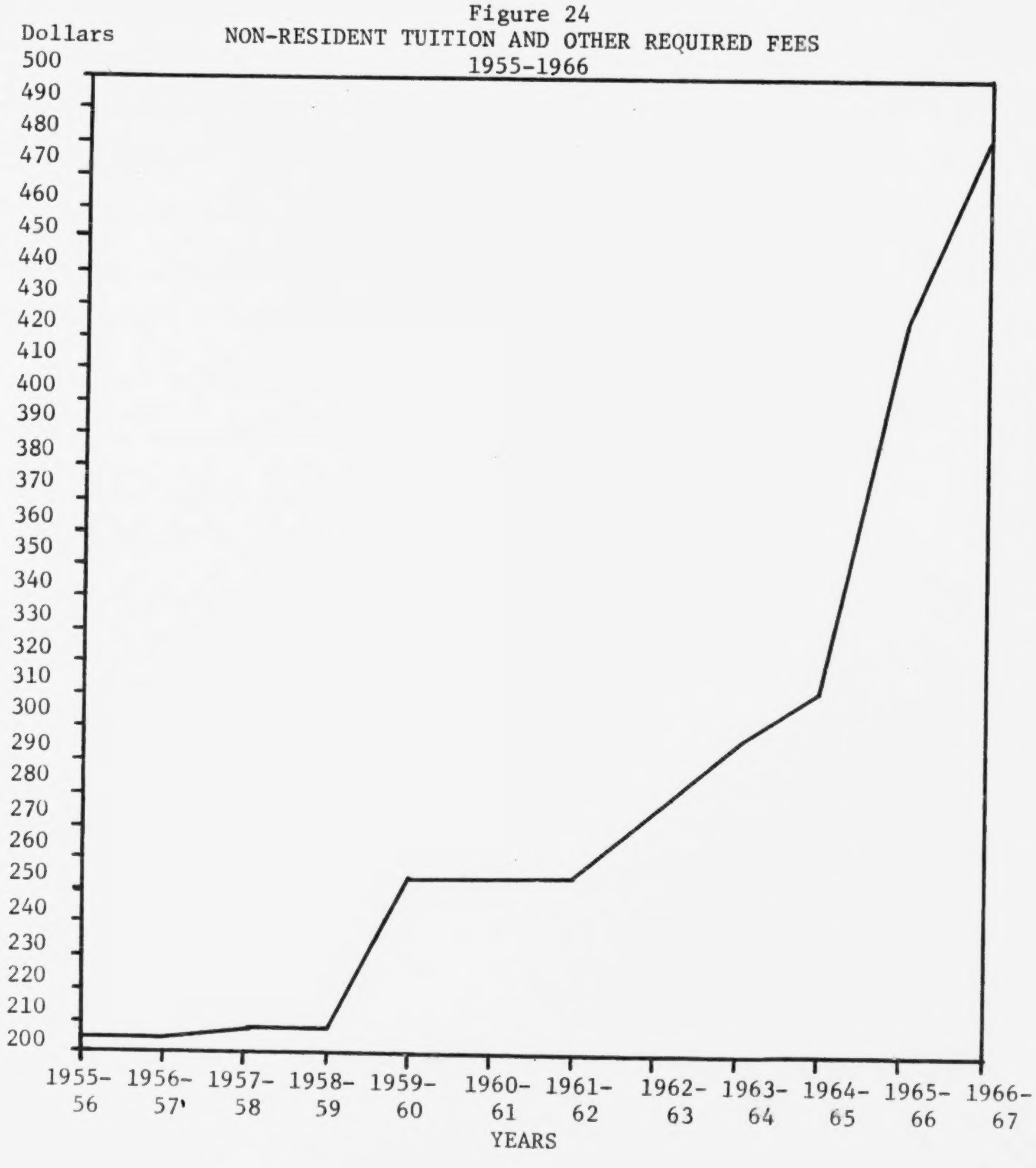


Figure 24
NON-RESIDENT TUITION AND OTHER REQUIRED FEES
1955-1966



charged $156.00 and the non-resident $366.00. Tables XXXVII and XXXVIII are a compilation of the data which show the resident and non-resident fees at the University of Wyoming for the periods 1944-45 to 1964-65. Required fees for 1964-65 were $306.00 for the resident and $62[illegible] for the non-resident. During the period from 1944-45 to 1964-65 required resident fees increased 285 percent and non-resident fees increased 323 percent. In the spring of 1965 the Board of Trustees announced that the 1965-66 school year resident fees would be raised to $331.50 and non-resident fees to $861.00 and that these fees would be further increased in 1966-67 to $345.00 for residents and $961.00 for non-residents. Thus, during the 23-year period resident fees increased 334 percent and non-resident increased 553 percent.

Revenues from tuitions have also increased, and in 1965 amounted to 16 percent of the University's total revenues and between 6.56 percent and 19.92 percent of the colleges' revenues.

The choice of student fees as a source of additional educational income raises some difficult and controversial issues as to educational philosophy and practice. Proponents of tuition hikes contend that the benefits which accrue to the recipients of college education justifies a higher charge than the present ones. Education is an individual desire as well as a social necessity, and for the individual student and his family a college education is an investment as well as a consumption expenditure. Significant benefit accrues to the individual himself as distinguished from other individuals and from society. The excellent return which the individual receives warrants a higher charge than the present one. Furthermore, advocates of higher tuition often insist that we can improve on the conditions of taxpayer equity and student opportunity

TABLE XXXVII

RESIDENT AND NON-RESIDENT FEES AT THE UNIVERSITY OF WYOMING FOR THE ACADEMIC YEAR DURING THE PERIOD 1944-45 TO 1964-65

Year	Resident	Non-Resident
1944-45	$ 79.50	$ 147.00
1945-46	103.50	148.50
1946-47	118.50	328.50
1947-48	136.50	346.50
1948-49	126.00	336.00
1949-50	126.00	336.00
1950-51	126.00	336.00
1951-52	141.00	351.00
1952-53	156.00	366.00
1953-54	156.00	366.00
1954-55	156.00	366.00
1955-56**	200.00	410.00
1956-57**	200.00	410.00
1957-58**	205.00	415.00
1958-59**	205.00	415.00
1959-60**	245.00	507.00
1960-61**	245.00	507.00
1961-62**	246.50	508.50
1962-63**	276.50	558.50
1963-64**	290.00	590.00
1964-65**	306.00	622.00

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*Director of Registration and Admissions, Annual Statistical Summary. Laramie: University of Wyoming. Data taken from the years 1944-45.

**Includes activities fee.

TABLE XXXVIII

TUITIONS AND FEES AT WYOMING COMMUNITY COLLEGES: 1965-1966

College	In-District	Out-of-District	Out-of-State
Casper Community College	$ 194.00	$ 250.00	$ 400.00
Northwest Community College	224.00	264.00	316.00
Sheridan Community College	197.00	269.00	600.00
Goshen County Community College	160.00	280.00	500.00
Western Wyoming Community College	180.00	230.00	230.00

by raising tuition, provided that at the same time we increase the number of scholarships and the size of the stipend. Opponents of higher tuition, however, make several arguments in their case against such hikes. In a democratic society social ideals cannot be achieved without low cost tuition. Higher tuition costs would preclude many from attending college. Do we wish to adopt the principle of imposing upon children the added limitations of their parents? It is clear that low economic status of a student's family determines the student's completion of both high school and college. If we intend to remove the financial consideration as far as possible from the decision of who attends college, any increase in tuition is detrimental. Furthermore, social policy today calls for the provision of more college trained persons than we are preparing; therefore, we must not only retain our policy of virtually free tuition but we must provide additional subsidy.

The question of tuition rates for community colleges is particularly complex. It has been a general supposition that community colleges make available educational opportunities to students from families with lower average incomes than do four-year institutions. Indeed, one of the major roles of the modern two-year college is that it does offer two years of college education to all youth. Tuition rates, therefore, must be kept low and tuition cannot be used as a means of raising additional revenues without obliterating the general junior college philosophy.

The problem of adequately financing a post-high school educational system capable of meeting the diverse needs of Wyoming's people is a major one. With the cost of higher education increasing every year, it is only intelligent to take a long hard look at tuitions. But if the state is to meet the educational needs of all its people, the social benefits of low tuitions must be weighed in the decision.

Toward Coordination

The multitude of problems that confronts the people of the state in the area of post-high school education points up another need, the need to coordinate a diversified system of post-high school education. At present, each institution in the state is performing its own self-perceived role of service to the best of its capacity. Each responds to its own pressures for providing a complex synthesis of educational services in respect to its students, faculties, and community interests. But the fiscal dilemma facing higher education forces an analysis and evaluation of the organizational patterns of higher education.

Other more populated states, such as Colorado, Utah, Wisconsin, etc., have already had to face the problem of creating a coordinated system of higher education. Experience in these states shows a pattern of growing enrollments, increasing numbers of institutions, duplication of expensive educational programs, rising expenditures, and competition between the institutions for the public funds. These developments in public higher education have led to the development of coordinating boards that have a primary concern for planning, programming, and coordination rather than for governing and managing a single institution that is offering a traditional and well-recognized program. Some 20 states, as of 1960, had already met this challenge by inaugurating some form of coordinating board or boards for their institutions.[15]

The growing need of a coordinated system of post-high school education institutions for Wyoming has already been recognized. The Advisory Committee on Higher Education in Wyoming in 1958 made, but failed to pass, on the following resolution:

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[15] S. V. Mortorana and Ernest V. Hollis, State Boards Responsibility for Higher Education (Washington, D. C.: U. S. Department of Health, Education and Welfare, 1960), pp. 12-13.

> The committee recognizing the contribution to higher education and vocational training that is being made by the junior and community colleges in Wyoming endorses the principle of state aid to these institutions and urges the adoption of a formula by the legislature whereby the several governing boards of these institutions may be assured of continuing participation by the state in their support.
>
> It is the consensus of the committee on organization of higher education that the needs of the students and the state as well as efficiency and economy will best be served by having one state agency responsible for state-level planning and broad policy formation for all post-high school education in Wyoming as well as the function of acting as the state agency for distribution of state financial aid to junior and community colleges. It should also be the function of this state agency to recognize and maintain a proper degree of local autonomy in the several community and junior colleges throughout the state.[16]

The structure through which public higher education is governed has assumed an increasingly important role as higher education has increased in scope, cost, and complexity. Creating an organizational structure capable of insuring that a diversified program of higher education is offered in the most efficient and effective manner is still a major challenge facing Wyoming.

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[16] _Proceedings of the Second Conference of the Advisory Committee on Higher Education in Wyoming_ (University of Wyoming, Laramie, Wyoming), p. 10.

CHAPTER V

EDUCATIONAL PROGRAMS AND SERVICES IN WYOMING

Post-high school education in Wyoming appears to be on the threshold of an unparalleled era of expansion. The two major reasons which account for the approaching era, as shown in Chapter IV, are prospects of increases in enrollments and growing demands from the public for programs and services of higher education. These factors lend great significance to the stock-taking and to the planning for the future which this survey undertakes.

The purpose of this chapter is to analyze post-high school educational programs and services currently available in Wyoming.

The University of Wyoming

The University of Wyoming is the only four-year institution of higher education in the state. Because of its unique position, the University performs functions of a diverse, many-faceted nature which in most states are scattered among a number of institutions. It provides the only four-year undergraduate, graduate, and professional instruction in the state; extensive research programs are undertaken at the University; and the University's service programs attempt to meet a multitude of needs for Wyoming's scattered population.

Instructional Program

The University offers degrees in numerous areas, offering bachelor's degrees from all of the major colleges and graduate degrees in over 100 different areas. The 16 broad categories of programs under which all courses and degree programs are classified at the University and the total number of student credit hours reported for 1945, 1950, 1955, 1960, and 1965 are given in Table XXXIX. The percentage distribution of student credit hours by broad categories of programs for the same years is presented in Table XL.

The advantage of presenting the students' credit hour data in this manner is that of indicating which programs are growing in demand and which are declining. It should be noted that a program may be declining in percentage distribution or relative rank while gaining in student credit hours. This is, of course, the result of the rapid growth in enrollment over the past five years.

Total student credit hours earned at the University has steadily increased since 1945--increasing almost 10-fold, from 9,112.5 to 86,287.5 credit hours in this period. Law, engineering, commerce, and education have had the greatest growth, while pharmacy has had a decrease in the number of credit hours earned.

Percentage distribution of semester credit hours by college or division has not changed appreciably during this 20-year period. There have been some changes in the percentage of credit hours given by various colleges, but these have been less than a one percent change over the 20-year period. Agriculture, commerce, engineering, law,and military gave a larger percentage of the credit hours in 1965 than they gave in 1945. Home economics, arts and sciences, music, education, physical education, and pharmacy on the other hand had a relative decline in the number of credits given.

Although not shown separately in these tables there has been a steady growth in the Graduate School at the University of Wyoming. Graduate credit hours are shown in their respective hours. Table XLI shows the graduate degrees offered at the University in 1966-67.

TABLE XXXIX

STUDENT CREDIT-HOUR TOTALS BY COLLEGES OR DIVISION AT THE UNIVERSITY OF WYOMING

College or Division	1945*	1950*	1955	1960	1965	Increase 1945-1965
Agriculture	269	1506.1	21088	2057	2585	9.6
Home Economics	308.7	492.0	577	771	1035	3.4
Arts & Science	5760.6	13608.7	22241.8	31734.5	52311.5	9.1
Music	326.7	454.0	870.1	951.5	1826	5.6
Speech Therapy	--	--	--	--	14	--
Commerce & Industry	815.4	2464.8	2762	3900	8506	10.4
Education	690.7	2164.8	2977	4757	6470.5	9.4
Division of Physical Education	312.7	915.7	1171	1790	2728.5	8.7
Student Teaching	--	--	--	--	1419	--
Engineering	482.7	2419.5	4243.3	5485	6754	14.0
Law	78.0	611.4	807	733	1577	20.2
Nursing	--	--	392	569	931	2.4
Pharmacy	--	566.7	534.1	585	492	-.13
Graduate	--	--	7	--	18	2.6
Military Service	68.0	600.7	1096.5	1592.5	1053	15.5
Personnel & Guidance	--	--	70	182	--	--
Total	9112.5	25804.4	36307.3	55107.5	86287.5	9.5

*1945 and 1950 converted to semester hours to show the growth pattern more clearly.

Source: Director of Registration and Admissions, Annual Statistical Summary. Laramie: University of Wyoming. Data taken from the years 1945-1965.

TABLE XL

PERCENTAGE DISTRIBUTION OF SEMESTER CREDIT-HOURS BY COLLEGES OR DIVISIONS, UNIVERSITY OF WYOMING

College or Division	1945	1950	1955	1960	1965
Agriculture	2.9	5.8	5.8	3.7	3.0
Home Economics	3.4	1.9	1.6	1.4	1.1
Arts and Science	63.2	52.7	61.3	57.6	60.6
Music	3.6	1.8	2.4	1.7	2.1
Speech Therapy	--	--	--	--	--
Commerce and Industy	8.9	9.6	7.6	7.1	9.9
Education	7.6	8.4	8.2	8.6	7.5
Division of Physical Education	3.4	3.5	3.2	3.2	3.2
Student Teaching	--	--	--	--	1.6
Engineering	5.3	9.4	11.7	10.0	7.8
Law	.86	2.4	2.2	1.3	1.8
Nursing	--	--	1.1	1.0	1.1
Pharmacy	--	2.2	4.5	1.1	.6
Graduate	--	--	--	--	--
Military Service	.75	2.3	3.0	2.9	1.2
Personnel and Guidance	--	--	.3	.3	--

Source: Director of Registration and Admissions, Annual Statistical Summary. Laramie: University of Wyoming. Data taken from the years 1945, 1950, 1955, 1960, and 1965.

TABLE XLI

UNIVERSITY OF WYOMING
GRADUATE DEGREES OFFERED
1966-67

Area	Degrees Offered
Accounting	M.S.
Agricultural Economics	M.S.
Agricultural Engineering	M.S.
Agricultural Extension	M.S.
American Civilization	M.A.
Animal Science Division:	
Animal Husbandry	M.S., Ph.D.
Dairy	M.S.
Poultry	M.S.
Wool	M.S., Ph.D.
Art	M.A.
Biochemistry	M.S., Ph.D.
Bioengineering	M.S.
Botany	M.A., M.S.
Business Administration	M.S.
Chemical Engineering	M.S.
Chemistry	M.A., M.S., Ph.D.
Civil Engineering	M.S., Ph.D.
Economics	M.A., M.S.
Education:	
Adult Education	M.A.
Agricultural Education	M.S.
Business Education	M.S.
Education	M.Ed., Ed.D., Ph.D.
Educational Administration	M.A., M.Ed., Prof. Diploma, Ed.D., Ph.D.
Educational Guidance	M.A., M.Ed., Prof. Diploma, Ed.D., Ph.D.
Elementary Education	M.A., M.Ed., Prof. Diploma, Ed.D., Ph.D.
Health and Physical Education	M.A., M.Ed.
Home Economics Education	M.S.
Industrial Arts	M.S., M.Ed.
Music Education	M.A.
Secondary Education	M.A., M.Ed., Prof. Diploma, Ed.D., Ph.D
Special Education	M.A., M.Ed.
Trades and Industry	M.S., M.Ed.
Electrical Engineering	M.S., Ph.D.
English	M.A.
French	M.A.

Area	Degrees Offered
Geography	M.A.
Geology	M.A., M.S., Ph.D.
German	M.A.
History	M.A., Ph.D.
Home Economics	M.S.
Industrial Management	M.S.
International Affairs	M.A.
Journalism	M.A.
Mathematics	M.A., M.S.
Mechanical Engineering	M.S., Ph.D.
Music	M.A.
Natural Science	M.S.
Nuclear Engineering	M.S.
Nuclear Science	M.S.
Petroleum Engineering	M.S.
Philosophy	M.A.
Physics	M.S., M.S., Ph.D.
Plant Science Division:	
Agronomy	M.S., Ph.D.
Entomology	M.S., Ph.D.
Plant Pathology	M.S., Ph.D.
Range Management	M.S., Ph.D.
Political Science	M.A.
Psychology	M.A., M.S., Ph.D.
Recreation	M.A.
Sociology	M.A.
Spanish	M.A.
Speech	M.A.
Statistics	M.S.
Veterinary Science Division:	
Microbiology	M.S.
Water Resources Engineering	M.S.
Zoology	M.A., M.S., Ph.D.

One area that has not grown in recent years, however, has been the terminal programs at the University. According to the University's stated philosophy, the University has sole responsibility for graduate and professional programs and indeed for the final two years of all baccalaureate programs. It shares with the community colleges the responsibility for the first two years of the baccalaureate programs and leaves to the community colleges the responsibility for vocational, semi-technical, and other two-year terminal programs, except in those instances in which it possesses unique facilities or competencies. In the past the University's College of Engineering offered some terminal programs; however, these have been discontinued in recent years. The College of Commerce and Industry offers a terminal two-year program in secretarial science. The number of students enrolled in the terminal program, however, is small and has not expanded generally as the University has expanded. The College of Education offers a program in vocational education; however, this is designed to train teachers in these areas. The University, as yet, has not developed fully other terminal programs such as data processing programs, X-ray programs, etc.

Geographic Distribution of Students

As the only four-year institution in the state, the University has the responsibility of teaching Wyoming's high school graduates, transfer students from the community colleges, as well as graduate and professional students. The breakdown of the geographic distribution of students attending the University in 1965-66, shown in Table XLII, shows that the University does in fact serve the entire state. Table XLII also shows the population distribution among the various counties of the state and compares the

TABLE XLII

GEOGRAPHIC DISTRIBUTION OF STUDENTS AT THE UNIVERSITY OF WYOMING: 1965-1966

County	County (a) Population	Percentage of State's Pop.	Number of Students at UW	% of Total Students
Albany	24,470	7.24	479	12.33
Big Horn	11,620	3.44	146	3.76
Campbell	7.140	2.11	58	1.49
Carbon	14.090	4.17	194	4.99
Converse	6,160	1.82	68	1.75
Crook	5,020	1.48	37	.95
Fremont	28,860	8.54	252	6.49
Goshen	11,610	3.43	150	3.86
Hot Springs	6,390	1.89	45	1.15
Johnson	5,510	1.63	58	1.49
Laramie	63,570	18.80	868	22.34
Lincoln	9,260	2.74	98	2.52
Natrona	49,900	14.80	381	9.81
Niobrara	3,720	1.10	42	1.08
Park	16,770	5.00	179	4.61
Platte	7,220	2.14	100	2.57
Sheridan	18,740	5.54	182	4.68
Sublette	4,410	1.30	34	.88
Sweetwater	17,710	5.24	213	5.48
Teton	3.900	1.53	35	.90
Uinta	7,400	2.19	76	1.95
Washakie	7,650	2.26	102	2.63
Weston	6,990	2.07	88	2.27
Total Wyoming	338,110	--	3,885	

(a) 1965 estimates of population, Gandi R. Rajender, "Population Estimates of Wyoming Counties," Wyoming Trade Winds.

percentage of students from each of these counties. As can be seen, although the University receives students from all of the state, more students do come from counties nearer the University. A similar study of the community colleges would indicate that students nearer to community colleges attend these institutions, and it may be concluded that students tend to attend institutions nearer to their home.

Organization of Instructional Program

The University's residence instructional program is organized into nine academic colleges, namely: the Colleges of Agriculture, Arts and Sciences, Commerce and Industry, Education, Engineering, Law, Nursing, Pharmacy, and the Graduate School. A brief description of each of these colleges shows the scope of the University's instructional program.

College of Agriculture. This college offers instruction in 16 agricultural programs and home economics. Curricula provide a sound background of basic sciences and a choice of a number of fields in which to specialize. Although students are trained in agriculture principles which apply throughout the world, special emphasis is placed on agriculture of the Rocky Mountain region. Curricula revisions are dictated by constant changes in agriculture which require graduates to have the most up-to-date scientific and business knowledge to succeed.

College of Arts and Sciences. The College of Arts and Sciences is composed of 15 departments and the Division of Music. This college provides a foundation, basic and general courses in every college on campus, in addition to having its own curricula in art, botany, chemistry, economics, English, geology, history, journalism, languages, mathematics, physics, political science, psychology, sociology, speech, zoology, and other fields.

College of Education. The College of Education is charged with the responsibility of training teachers for Wyoming's schools. In addition to training new teachers, the college sponsors a number of institutes and extension programs for upgrading the teachers in the field. In addition, it conducts a summer program aimed at enriching the experiences of the experienced teacher.

College of Engineering. The program of this college includes instruction in basic research, applied research in connection with the development of the state's resources, and advisory service to agencies and others concerned with resource utilization and various aspects of engineering. Bachelors degree work is offered in architectural, civil, electrical, general, and mechanical and agricultural engineering. The masters program is available in civil, mechanical, and nuclear engineering, while a doctoral program is offered in civil and electrical engineering.

College of Law. This college, founded in 1920, is the only law school in Wyoming. It provides training for the practice of law in accordance with the highest standards of professional responsibility. It also offers a combination of law and other courses to meet a wide range of business and public careers, and fills an increasing demand for research, consultation, and other assistance from citizens and governmental units.

College of Nursing. The College of Nursing, established in 1951, prepares graduates to practice according to the highest standards of professional nursing. The first two years of the curriculum has been offered also at Casper College and Sheridan College. At the end of the sophomore year students of nursing from these two colleges transfer to the University to complete the program.

College of Pharmacy. The primary educational objective of this college is to provide a sound scientific, professional, and cultural background necessary for the practice of pharmacy in all of its various branches.

Graduate School. The Graduate School organizes and develops programs for students interested in educational experience beyond the baccalaureate degree and also stimulates research and creativity on the part of both students and faculty. Graduate level instruction is provided by various colleges with the Graduate School fulfilling functions of administration and service.

Other Resident Instructional Programs. In addition to these major colleges with the University, there are several divisions which carry on a portion of the residential instructional program. The Division of Physical Education and Intercollegiate Athletics is one such division. This division carries on a program of competition of intercollegiate athletics in all sports and offers a major course of study at the undergraduate and graduate levels in physical education, health, and recreation for students who plan to teach or to do other work in these areas. It also provides activity courses in physical education which are required for all students during their freshman and sophomore years.

The ROTC Division of both the Air Force and Army are still another of the teaching divisions. All land grant colleges and universities are required by law to offer military training. Both of these programs are offered at the University and lead to a commission upon successful completion of the prescribed course.

Two sessions of summer school are also offered at the University. These provide for public school teachers, administrators, and students who wish to accelerate their education by attending beyond the regular school year.

There is also a five-week session offered at the University science camps for students in botany, geology, and zoology, as well as a number of specialized short courses offered for various groups.

Finally, there is a University School which offers classes from nursery school through the twelfth grade and is operated by the College of Education. It gives University students an opportunity to observe under master teachers, and also serves as a laboratory for research on new methods of teaching.

Research Programs

Many programs carried on by the University are services that are significant for all citizens. Research provides new knowledge for use in all educational programs. It also provides information which the people of the state and nation can use in many helpful ways. The University's research efforts fall into two categories: (1) organized research units having budgets for this purpose and (2) instructional staff research projects which are not financed from budgets of organized research units. The organized units are discussed on the following pages.

Agricultural Experiment Station. Agricultural research has been a major activity since the early days of the University. Research projects are conducted in laboratories on the campus and at experimental farms located near Laramie, at six substations in various parts of the state, on ranches and farms, and in homes. Through the years the value of this agricultural research program has been well demonstrated. All of the state has profited from increased agricultural income, from improvement in the quality of food and fiber, and from economy of production.

Agricultural Experiment Station studies in recent years have been concerned with livestock production and marketing economics; biological and chemical control of weeds including Canada thistle; control of the harvester ant, sheep nose botfly and cattle face fly; water conservation on irrigated and dry lands; classifying and improving rangelands; feeding and breeding studies of cattle and sheep for quality meats; causes and possible control of economically important diseases of sheep and cattle; human nutrition; wheat breeding; and the biochemistry of selenium and herbicides--to mention only a few of 138 active research projects.

Agricultural Substations. Six substations and the Clarke-McNary Project meet the needs for research under conditions representative of nearly every type of agriculture in the state. Substation altitudes vary from 3,745 to 6,100 feet, their annual rainfall from 5.85 to 14.76 inches, and their growing seasons from 48 to 141 days. Irrigated substations are located at Afton, Powell, and Torrington, while dryland facilities are at Gillette, Sheridan and Archer. The Clarke-McNary Project is concerned with the purchasing and selling of trees to farmers and ranchers for shelter belts and wood lots.

Research scientists with headquarters at the main experiment station in Laramie carry on projects at the substations in cooperation with local personnel to (1) solve problems of farmers and ranchers in the area and (2) solve agricultural problems of state-wide interest.

Arts and Sciences Division of Basic Research. This division, authorized by the Board of Trustees in August, 1964, was formed for the purpose of coordinating and supporting research in a wide variety of academic disciplines within the college and to handle grants or contracts from outside sources. "Seed money" provided by the division to Arts and Sciences faculty members for the initiation or continuation of basic research projects is expected to generate at least three times its total in grants from other sources. The new research unit is expected to nurture basic studies in such areas as mathematics, natural and social sciences, humanities, and the arts.

Division of Business and Economic Research. This division operates in conjunction with the College of Commerce and Industry. It was established several years ago in response to requests for research and information important to Wyoming's industry, business, and general economy. The division publishes a quarterly, Wyoming Trade Winds, which carries analyses of the state's economy and articles of general interest to businessmen.

Typical studies published in recent years are those devoted to personal income in Wyoming counties, the resources, people and economy of various sections of Wyoming, Wyoming's cafe business and service stations, estimates of agricultural income by counties, retail clerk efficiency, Wyoming's community economic systems, and the application of an input-output framework to a community economic system.

Natural Resources Research Institute. Operated in conjunction with the College of Engineering, this institute assists in the development of the natural resources of Wyoming and promotes its industrial growth, wider utilization of its minerals and fuels, and development of other resources through laboratory investigations and research.

NRRI research activity on weather modification, sponsored by a grant from the U. S. Bureau of Reclamation, has been a major project in recent years. NRRI staff members have also undertaken broad research programs in the fields of coal utilization, water resources, and information data processing. For more than a decade the NRRI has contributed materially to the state's development by (1) experiments concerned with the character, processing, and economics of central Wyoming phosphate rock, (2) a project in petroleum which showed how to upgrade the quality of heavy crude oils, and (3) developing information on bentonite which has enabled a company to become active in the production of this valuable resource. Research projects have also included work with coal aimed at the preparation of coke substitutes, phosphate defluorination, processing of coal tars and black oils, and the production of smokeless briquets.

Water Resources Research Institute. The Water Resources Research Institute, an interdisciplinary research organization, undertakes studies on various aspects of water resources, including engineering, scientific, economic, legal, and political aspects. Development of a state plan for maximum utilization and conservation is one goal of this program.

Biological Research Station - Jackson Hole. This station is maintained to provide opportunities for research in conservation, fisheries biology, game management, and other phases of biology. The station is administered by the University's Department of Zoology and Physiology under an agreement with the New York Zoological Society and in cooperation with the National Park Service. Facilities, including laboratories, a library, and living quarters, are located in Grand Teton National Park near Moran.

Soils Laboratories. Soil testing laboratories are located at Riverton, Powell, Torrington, and Laramie to provide free soil fertility testing for farmers and ranchers and to conduct soil research programs. Requests for soil testing have increased about 30 percent per year for the past two years.

Research Development Center. A recent addition to the research field is the establishment of a Research Development Center. A director was appointed whose responsibilities include coordination of all of the organized research at the University of Wyoming. Available to all faculty and staff, the resources of this office include helping in preparation of actual requests and in helping with the complicated financial procedures necessary for funding and acceptance by the University.

Computer Center. The University maintains a Computer Center which is vital to research and teaching functions. Since one of the teaching responsibilities of the University is to prepare students to cope with new methods and rapidly changing technologies of industry, the University offers courses in computer design, computer logic, and computer programming. These courses also prepare individuals in complex research techniques and time-consuming data processing which must be done on computers. In addition, graduate students and research faculty are provided computer time and non-credit short courses in computer programming to assist them in their projects.

The Center, which serves the entire University, is presently equipped with a Philco 211 computer. This machine is in the large computer class but is slower than some of the newer type computers.

This Philco 211 has built up an enviable record for reliability and service. It has a memory of 32,768 words and a cycle time of six millionths of a second. The Computer Center advisory committee believes this machine will fulfill the immediate future needs of the University and will give students and research personnel a machine from which they can easily transfer to many of the present day large computers.

Recent experimentation with remote control stations that will be installed in the community colleges in Wyoming and at Warren Air Force Base in Cheyenne will expand the educational possibilities of this particular machine.

Other Research Organizations and Areas. In addition to those mentioned above, the Research and Publication Center of the College of Education and the Research Service Office of the Adult Education and Community Service Division are engaged in research in various areas of education.

Individual professors on campus are, from time to time, awarded grants or monies through the Research Council of the Graduate School to conduct research in special areas related to their own special field. The faculty carries on extensive research in support of writings and publications.

Service Programs

The roles performed by the University are greatly influenced by the fact that it is a land grant institution. As a land grant institution, the University accepts responsibility for providing services to Wyoming's people throughout the state. The service activities are carried out mainly by three divisions of the University, namely, the Adult Education and Community Service Division, the Wyoming Agricultural Extension Service, and the Bureau of Business and Economic Research.

Adult Education and Community Service Division. The Division of Adult Education and Community Service is one of the main service arms of the University. It provides a wide scope of service activities as can be seen partially from its internal organization which includes the following offices:

Director
Audio-Visual Services
Correspondence Study
Extension Study
Adult Education Library
Research Services
Safety Foundation
School Services
Public Administration Services

One major function of the division is to extend the University's instructional programs to all of the people in the state. The extension and correspondence programs take the University to the people who for various reasons find it difficult, if not impossible, to attend the University. Extension classes are offered on both the undergraduate and graduate levels and taught by University-approved instructors. Through this medium and through correspondence, a total of 25 percent of the work necessary for a bachelors degree may be acquired. No more than eight hours of graduate credit may be used on an advanced degree.

The scope of the extension program can be seen from the fact that in 1965-66 there was a total of 120 classes and 2,142 students. These 120 classes were held in 27 different communities. Teachers for these classes are selected and approved by the deans of the colleges in which the subject is taught. This insures that the quality of the course is the same as that of those taught on campus.

Most of the classes were taught by the College of Arts and Sciences, followed by the Colleges of Education, Commerce and Industry, and Engineering in that order. Courses were taught at all levels but the largest numbers were in the freshman and graduate level. The two combined levels accounted for 78.8 percent of all classes.

Correspondence courses are another way of extending the University's instructional programs. Through correspondence study, courses in college and high school subjects are available to people in and out of school, in and out of the state, and even in foreign countries. Regular college courses are available for individuals unable to take the course in a conventional manner for any reason. People can take high school courses to complete their education in the confines of their own home. High school students can enrich the offerings in their own schools by correspondence courses. In the year 1965-66, there had been a total of 2,137 students enrolled in correspondence courses.

Through conferences and institutes, educational programs are offered to numerous other groups in the state. During 1965 some 17 conferences involving 1,802 people were held by the division. In addition to the conferences held on the University campus, two off-campus centers, Trail Lake Ranch and Schwinn Conference Center, both near Dubois, Wyoming, are operated by the division. During the summer months classes and conferences are held at these facilities for a number of groups.

The division also attempts to make available many of the resources of the University of a cultural or activity nature to communities. Through its Special Projects Office, programs such as foreign films, speakers, discussion groups, music programs, and art exhibits are scheduled throughout the state.

Off-campus students are provided library facilities through the Adult Education Library. In 1965-66, 3,635 books from this library were loaned to various groups and individuals throughout the state. In addition to the books loaned, 563 copies of plays were loaned to various groups.

Another role of the division is to cooperate with and provide support to other educational institutions. This is done in a number of ways. The Director of the Adult Education and Community Service Division is the executive secretary for the Wyoming Community College Commission. In this capacity visits are made to the community colleges to help in determining weak areas, in improving strong ones, and in generally serving as a consultant to the presidents of the community colleges. A close coordination between the colleges and the division exists as a result of this arrangement.

The division also provides leadership and support for new educational ventures. The division is cooperating in a tele-lecture series of classes in Carbon and Converse Counties. The division's director also serves as chairman of the campus committee on educational television, as well as serving as a member of a state-wide committee to study the feasibility of educational television in Wyoming.

A unique opportunity to secure help in adult education programs and in learning about the services available to communities from the University is presented by the field coordinators. Ten people located in Casper, Sheridan, Powell, Riverton, Rock Springs, Torrington, Newcastle, Worland, Cheyenne, and Kemmerer extend the University and its services to all areas of the state.

One particularly important phase of the work of the field coordinators is to help organize the credit extension classes by the University. In 1966 they helped organize 114 classes for 1,976 students throughout the state. In this work they contact schools and interested local groups for students, secure classrooms, arrange for materials and books, and generally act as supervisors for the courses.

The field coordinators spend much time on organizing and helping schools organize non-credit adult education classes. Serving as consultants in all phases of adult education allows each community to secure needed help in this expanding area. In addition to help in non-credit classes, they help with students desiring information on the University of Wyoming. Contacts with 1,915 individual students were made in 1965-66 by the field coordinators. They also serve as contact men for science camps, conference arrangers, and a host of University and adult education functions.

The division's Office of School Services acts as a coordinating agent between the public schools, their associated agencies, and the University of Wyoming. One of the most important functions of the office is the position of executive secretary of the Wyoming School Boards Association. In this capacity, the coordinator serves as advisor to school boards throughout the state. In helping to determine policy, in distribution of information, and in conducting workshops, conferences, and short courses a real adult education function is performed. Over 300 people attended the annual convention and over 1,000 people attended meetings held to explain the new tax proposal endorsed by the Wyoming School Boards Association.

Another function of this office is the service performed in conjunction with school surveys. Available to all schools in Wyoming, this service includes consultative help in problems of building, site selection, curriculum, or a combination of all aspects of public school work. The work carried on here is in conjunction with the College of Education and upon the request of the local school.

Each year the coordinator conducts a Junior High Science Camp at the Schwinn Conference Center or at Trail Lake Ranch, both located near Dubois, Wyoming. An opportunity to further science or mathematics skills of the talented junior high youth is one more service that the youth of Wyoming may find valuable in the future.

In addition to these services to the state's educational institutions, the division's Office of Research Services undertakes various research projects useful to the schools throughout the state. Cooperative research programs with other agencies has produced in the past year needed information on public school adult education programs, manpower needs and skills in the state, as well as a host of other subjects including this report on post-high school educational needs in Wyoming.

A third major function performed by the division is to provide educational assistance to public officials and communities. The division's Office of Public Administration performs many of these services. It provides information and service to state, county, and municipal governments. One of the present duties of the coordinator is to serve as the executive director of the Wyoming Association of Municipalities. In this capacity, consultant service is made available to all the towns and cities of Wyoming. Arrangement of classes and courses designed to improve municipal government is made by the coordinator. Publications designed to inform and enlighten the public officials are distributed to city and county officials of the state.

In the year 1965-66 a total of seven schools or meetings involving 328 people were held. In addition, the annual convention of the Wyoming Association of Municipalities was attended by 225 people. The Wyoming Law Enforcement Academy is one of the outstanding schools in Wyoming. This year 45 law enforcement officers from Wyoming, Colorado, and Nebraska were subjected to two weeks of intensive training in all phases of their work. Improved techniques of law enforcement improve all of our communities.

Two projects are just starting that will improve the services to communities during the coming years. Increased government support of the Law Enforcement Academy will increase attendance from smaller communities and allow greater participation from all communities. A program of community development is being co-sponsored by the state and federal governments. Problems of communities will be studied and help made available to solve the problems as they are uncovered under this program.

The Office of Civil Defense contracts to the national office of Civil Defense to conduct educational classes throughout the state. During the past years they were contracted to conduct 10 seminars for public officials, four radiological monitoring classes, seven shelter management courses, four civil defense management courses, and three radiological defense officers courses. Actually, they exceeded this in most areas. Eleven seminars for 389 people, five classes in radiological monitoring for 38 people, eight shelter management courses for 97 people, four classes in civil defense management for 59 people, and three radiological defense officers courses for 50 people were conducted. In all, a total of 633 people were trained either as managers or as instructors in various phases of civil defense.

In addition to the regular teaching of classes, this office is available to make speeches in the general area of civil defense. Conducting classes in 20 towns in Wyoming, the office extended a special type of adult education to the State of Wyoming.

Another program designed to assist public officials as well as the general public is the division's Safety Foundation. Since its establishment last year, the Foundation has initiated the Driver Improvement Program of the National Safety Council in Wyoming, assembled a collection of printed materials concerning safety education, distributed these materials to interested organizations and individuals, utilized the safety films included in the film library, and presented programs on safety to several organizations.

Wyoming Agricultural Extension Service. Extension is the off-campus educational arm of the College of Agriculture. It teaches practical application of experiment station research findings. It carries educational information to farmers, ranchers, agri-businessmen, and homemakers. It gives leadership to 4-H Club programs and human and natural resource development. County and state staffs in cooperation with local people plan and develop extension's activities. The Agricultural Extension Service in Wyoming is financed with federal funds (36.4%) available under the Smith-Lever Act of 1914, state appropriations (43.1%), and county funds (20.5%)

The Extension Service encompasses many disciplines and specialties. Its basic philosophy is to help people help themselves. Technology has unleashed change in agriculture, home living, and the rural community, narrowing the differences between the urban and rural community. In retrospect the educational material is changing and becoming more specialized but the educational methods and system of planning programs to serve the clientele is much the same as in the past.

The extension program is conducted in the following seven functional areas:

Extension Administration
Extension Information
Agricultural Production, Management, and Natural Resources Development
Marketing and Utilization of Agricultural Products
Extension Home Economics
4-H and Other Youth Extension Work
Organization and Supervision of County Extension Operations

The Federal Extension Service has suggested an eighth area to be added--Public Affairs and Agricultural Policy.

There are 84 professional positions. The staff today includes four administrators, two supervisors, three youth leaders, 14 on-campus agricultural specialists, four on-campus home economics specialists, three information specialists, 25 county agents, eight assistant county agents, and 24 home demonstration agents. One home demonstration agent and two agricultural agents are employed under contract with the Bureau of Indian Affairs. Seven experiment station personnel devote from one to three months to extension. Five agricultural extension specialists devote from three to five months to research or teaching. These combinations give greater depth to the agricultural programs.

Specialists are trained in agricultural economics; in home economics which includes textiles, clothing, family economics, and nutrition; in animal husbandry; range management; entomology; extension education; secondary education; agronomy; nutrition; meats technology; engineering; general agriculture; journalism; photography; visual aids; and other related fields.

Extension cooperates with other colleges and departments on the campus. For example, the College of Arts and Sciences and Division of Adult Education have developed educational material in art appreciation, economics for laymen, and rural sociology for county discussion groups (organized by county staffs). Extension economists work closely with the Division of Business Research and the College of Commerce and Industry. Extension engineers have helped the College of Engineering conduct ditch-sealing and farm-plan service programs. Also cooperating with extension are the College of Education and Department of Physical Education.

The Agricultural Extension Service reached 45,000 individual Wyoming families in its programs for agriculture, resource development, homemaking, and 4-H. In doing this, 302,000 individual contacts were made by county agents, home demonstration agents, and state staff. In addition, local adult leaders trained by extension people met with 128,700 youths and adults to give educational assistance.

Fourteen percent of Wyoming youth, or 8,860 boys and girls between the ages of 10 and 19, were in 4-H Club work. In 1965 enrollment will exceed 9,000 youth.

Work is being conducted with Wyoming farmers and ranchers in developing electronic data processing systems for adapting farm and ranch accounting and management plans to electronic computers.

In the area of livestock improvement, performance testing demonstrations have been established as follows: the State Fair Grounds at Douglas for bull calves of all breeds and the Torrington substation for ram lambs. The demonstrations are used to evaluate superior qualities as a method of improving Wyoming's cattle and sheep industry.

The Laramie County extension staff has taken an active interest in resource development. Under the Rural Areas Development Program the citizens of Laramie County have brought about many changes. The Rural Areas Development committees have been organized in 22 Wyoming counties and many have made notable accomplishments.

The state-wide extension home economics program has been successful in reaching new audiences. Special programs have been initiated to reach the aged, young homemakers, and individuals not in organized homemakers clubs. Home demonstration agents have worked closely with welfare recipients of surplus food commodities, showing them how to turn these commodities into nutritious, tasty meals.

The Extension Service continued to take specialists from the University, private industry, and other agencies into nearly every community of the state. Kitchen fairs were staged at Rock Springs, Thermopolis, Greybull, and Powell, with 900 attending. Institutes and special commodity programs were held in Afton, Cokeville, Kemmerer, Lusk, Newcastle, Gillette, Douglas, Worland, Lovell, Casper, Riverton, Sundance, Mountain View, and other areas. There was a total attendance of 2,360 people. Subjects covered ranged from buying kitchen appliances, dollars and decisions, consumer information, home grounds beautification, civil defense, weed control, lamb, beef, and fish, to livestock nutrition, farm accounting, sagebrush control with chemicals, and many other subjects of interest to rural and urban homemakers, agribusinessmen, and farmers and ranchers.

With the notoriety agricultural chemicals have drawn in current literature and in the halls of Congress, funds were granted for initiating an educational program in the safe and economical use of agricultural chemicals.

Today extension must meet needs of changing patterns of family living and of rising standards of living. Several dynamic forces, often lumped together as technology, have brought amazingly rapid progress to agriculture. A part of the cost of this progress is the continued movement of people from agriculture. Cost-price squeeze on farmers and ranchers, narrowing differences in living standards between rural and urban families, and adjustments of the rural society to change, have all received special emphasis in extension programs. Urban dwellers are learning of services available in horticulture, home grounds beautification, 4-H youth programs, homemaking and community development activities. Events such as annual farm-city week, institutes and field days, and town and country pastors' conferences improve rural-urban understanding.

County extension programs are planned and implemented on the basis of need in relation to overall problems determined by agricultural and home demonstration agents and extension advisory committees. Problem areas common to most counties include:

1. Improving efficiency of production to increase net income.
2. Wise use of ranch, farm and family income.
3. Making homes more comfortable, convenient and attractive.
4. Time management of family members.
5. Health, safety, and personal development of people.
6. Developing better understanding of situations and public affairs affecting the welfare of the people.
7. Development and wise use of physical and human resources to maintain maximum economic stability.
8. Continuous development of youth for maintaining a progressive, thinking citizenry.

Each of these areas requires programs on several commodities and subjects. Many of them are directed to special problems in urban as well as rural communities. In conducting demonstrations and providing information, county agents often enlist the help of state extension specialists. When working on special problems, it is not uncommon for two or more specialists in different subject areas to pool their resources.

As another example of special audiences, in Goshen County the home agent has given special attention to involving Spanish-American homemakers in the extension program. They have been reached through direct efforts of the home agent, through programs presented by leaders from the home demonstration club program, and through special interest workshops. These women have been eager for this educational program and have applied their learnings to improve the living for their families. Many have now gained the confidence needed to take a place in club, council, and community activities.

Realizing that Wyoming's financial resources are limited, extension's future growth must be based primarily on outside grants, cooperators' support, and increased allocation of federal funds. Development of extension programs in depth in agriculture, in home economics, and in related areas will require additional personnel along with more offices and secretarial help. Additional physical facilities for offices will be needed as well as equipment and supplies for future operations.

The Agricultural Extension Service needs to decide its future course. Three possible alternatives confront extension:

1. Upgrading the program with major emphasis on the traditional roles of agriculture, home economics and youth.
2. Expansion of services to include community development.
3. Expansion and further coordination with the general Extension Division of the University of Wyoming.

Bureau of Business and Economic Research. The Bureau of Business and Economic Research has been designated as the agency to administer the Technical Services Program in the state. The purpose of the Technical Act of 1965 was to enable businesses, industrial establishments, and commerce to acquire and use scientific and engineering information more effectively.

Under this program, the Bureau will prepare and disseminate technical reports, abstracts, computer tapes, microfilms, reviews, and similar scientific and engineering material. It will provide a reference service to identify sources of engineering and scientific information useful to industrial establishments in the state. Finally, it will sponsor industrial workshops, seminars, training programs, extension courses, demonstrations and field visits designed to encourage the more effective application of scientific and engineering information.

At present the Bureau is preparing a state technical assistance plan, and after its adoption the Bureau will undertake these service activities to assist industry and business in the state.

Wyoming Community Colleges

At present there are five community colleges in the state and an additional one is now in the process of being established at Riverton. Existing colleges are located at Casper, Torrington, Powell, Sheridan, and Rock Springs.

The location of the colleges coincides with the major population centers in the state with the exception perhaps of Cheyenne and Rawlins.

The community colleges are organized locally as junior college districts composed of a portion of or an entire county with the exception of Goshen County Community College District which includes a part of two counties. Despite the fact that they are locally organized, the community colleges serve youth from a much broader region. The demands made upon the various community colleges can be seen from Table XLIII which enumerates enrollments according to residence.

TABLE XLIII
RESIDENCE OF STUDENTS IN WYOMING COMMUNITY COLLEGES

College	Percentage of In-District Students	Percentage of Out-of-District Students	Percentage of Out-of-State Students
Casper			
1962-63	70.64	12.50	4.33
1963-64	68.61	25.33	6.06
1964-65	64.94	29.08	5.98
1965-66	66.37	27.79	5.83
Northwest			
1962-63	45.24	41.32	13.44
1963-64	41.61	43.23	15.16
1964-65	31.48	49.39	19.13
1965-66	29.68	49.46	20.86
Western Wyoming			
1962-63	100.00	---	---
1963-64	98.91	1.09	---
1964-65	77.39	17.59	5.02
1965-66	83.49	11.32	5.19

Source: Material supplied by community colleges.

While there are no detailed reports available at this time, Goshen County Community College estimates that 60 percent of its total enrollment resides within a 10-mile radius of campus; approximately 15 percent of the students reside between 10 and 25 miles from campus; approximately 22 percent reside beyond 25 miles, but within the state; and approximately two and one-half percent of the students reside out of state.

Instructional Program

Community colleges are designed to fulfill a special need in accepting all individuals interested in the continuing process of education and in providing for these individuals according to their respective needs in accordance with the level of their development and ability. In keeping with this objective, the instructional programs at Wyoming community colleges include two-year programs of study in as many academic and vocational fields as the resources of the college will permit, both for students who plan to continue with upper division studies at other institutions and for those who will terminate their formal education at the conclusion of two years.

The transfer program includes a complete lower division program designed to meet the transfer requirements of the University of Wyoming and four-year colleges and universities elsewhere. A student may complete the first two years of a four-year program at any one of the five community colleges and transfer with full junior standing to the four-year college of his choice. In a 1963 study conducted by Northwest Community College as a follow-up of its own graduates, it was pointed out that "...eighty percent of the students continue their education in four-year institutions fairly well distributed over the country. There is no record of any transfer student being denied admission, thus acceptance of credits by four-year institutions has never been a problem."

A major portion of the students enrolled in the community colleges are classified as transfer students. Northwest Community College and Western Wyoming Community College report the highest percentages of regular students who are enrolled in curricula which are considered to be preparatory to transfer to a four-year institution. Northwest designates almost 98 percent, and Western Wyoming 96 percent of its regular enrollment as college transfer students. Goshen County Community College reports that approximately 75 percent of the student body are transfer students, while Sheridan College reports that approximately 60 percent of the students are preparing to attend a four-year institution. Exact figures are not available from Casper College, where the percentages are most certainly lower, due to the relatively high numbers of adults and vocational students in attendance at that institution.

In addition to the academic transfer programs, the instructional programs also are designed to meet a number of other objectives. The community colleges attempt to provide a general education to give students an awareness and appreciation of the political, social, and intellectual aspects of living in a contemporary society. They also undertake remedial programs in reading, English, and mathematics to help students develop the skills necessary to perform more satisfactorily in their chosen field of work. Each of the community colleges also assumes the responsibility of assisting students to orient themselves to adult life. Counselors are available at each of the institutions who assist the student to discover his abilities and aptitudes, assist him in the choice of a vocation, and prepare him for the successful pursuit of such work.

The community colleges in Wyoming also offer educational opportunities in occupational and vocational training for those who are planning to enter the labor market as beginning employees or those who wish to advance themselves in their positions. These programs provide instruction in skilled, technical, and semi-professional areas of education, and are designed to enable the student to achieve occupational competence for living in a contemporary society. Table XLIV shows the course offerings at the various community colleges.

Adult Education. Most of the community colleges offer adult education credit and non-credit classes. The usual adult education program is a combination of courses normally offered in the regular daytime schedule and other courses especially designed to meet the occupational and cultural needs of the adults in the community. The colleges also stand ready to lend assistance to businesses, schools,and other institutions and individuals or groups when the special service and programs of the college may be used.

The adult education programs differ widely in scope, but all face the same unfortunate financial restrictions, since these programs are largely self-supporting and receive no state assistance. Therefore, their existence depends entirely upon the demand. Each of the colleges takes a different approach to the problem of extending its offerings to the adult segment of the community, and each approach is developed according to the peculiar needs and facilities of each community. For instance, in 1965 Northwest Community College offered 11 courses to the adults of Cody which were attended by 265 people. During that same period, Casper College concentrated all of its efforts on 117 transfer programs, 59 non-transfer programs, and 27 hobby and recreational courses, all of which were held for the community adults right on the college campus.

In 1965 Western Wyoming College conducted a total of 45 evening adult education courses in facilities provided by the high schools of Green River and Rock Springs, and elementary schools of Superior. During this time Sheridan College and Goshen Community College were offering no off-campus

TABLE XLIV

NUMBER OF COURSES OFFERED IN WYOMING COMMUNITY COLLEGES

Course	1966-67 Number of Courses Offered				
	Casper	Goshen	Northwest	Sheridan	W. Wyoming
Commerce[1]	21	17	22	16	21
English and Lit.[2]	22	12	20	15	15
Humanities[3]	107	57	45	31	11
Life Sciences[4]	78	26	47	58	25
Physical Sciences[5]	47	21	31	30	25
Social Sciences[6]	25	26	27	21	30
Vocational-Technical	42	--	11	--	--

[1] Commerce includes business administration, secretarial science, accounting, distributive education, and statistics.

[2] English and Literature include composition, literature, and journalism.

[3] Humanities include art, modern languages, music, philosophy, speech, drama, and library science.

[4] Life Sciences include agriculture, agronomy, anthropology, botany, health, physical education, home economics, nursing, and zoology.

[5] Physical Sciences include chemistry, engineering, geology, mathematics, physical science, and zoology.

[6] Social Sciences include economics, education, geography, history, political science, psychology, and sociology.

Source: Information provided by community colleges.

adult education courses, except upon specific request, although both colleges offered on-campus courses for adults of the community.

Enrollment in evening classes from the inception of community colleges in Wyoming in 1945, until 1961, far outnumbered those of the day school. In 1962, however, the day school enrollments for the first time outnumbered those of the evening school. This reversal has since continued so that the composite day enrollments are now more than twice as large as the composite evening enrollments (see Table XLV).

TABLE XLV
TOTAL ENROLLMENTS, WYOMING COMMUNITY COLLEGES
1960-61 TO 1965-66

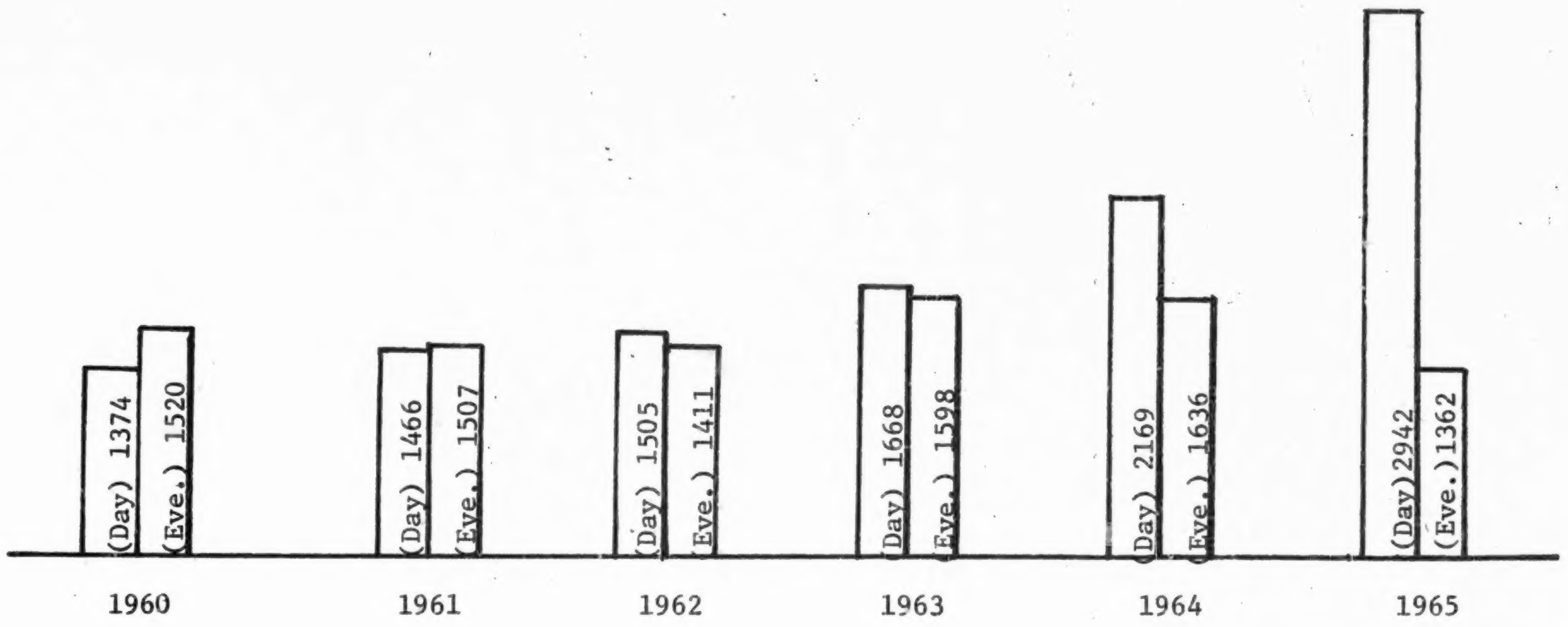
College	1960	1961	1962	1963	1964	1965
Day Enrollment:						
Casper	732	739	739	825	1,121	1,591
Goshen	123	133	100	113	162	198
Northwest	251	273	313	328	419	559
Sheridan	226	275	281	310	314	382
Western Wyoming	42	46	72	92	153	212
Evening Enrollment:						
Casper	1,123	1,181	1,064	1,231	1,137	712
Goshen	--	--	--	--	--	--
Northwest	360	255	255	249	375	560
Sheridan	--	--	--	--	--	158
Western Wyoming	37	71	92	118	124	132

The bar graph (Figure 25) which follows compares the total community college day enrollments with the total evening enrollments for the school years 1960-61 through 1965-66.

The reason for this reversal in emphasis from evening to day classes is fairly apparent. As increasing demands are placed upon the academic facilities of the colleges by those students primarily interested in taking courses which will apply toward a baccalaureate degree, a proportionate

Figure 25

TOTAL COMMUNITY COLLEGE DAY AND EVENING ENROLLMENTS
1960-61 THROUGH 65-66



decrease in the space available for non-transfer, adult enrichment, and community interest courses occurs.

Because of the fact that the colleges are presently required to decrease the number of general interest courses formerly available to the adult segment of the community, the average of the students in attendance has decreased since 1961 from 19.8 to 18.4 years of age.

Community Services. Recognizing the importance of meeting the specific needs of each community, the community colleges of Wyoming made every effort to respond to the cultural and recreational demands placed upon them by their respective constituents. Goshen County Community College has taken the lead in coping with the problems of the elderly in a venture which is called "Senior Citizens Program."

This program recognizes that the "old" are assets, not problems, to our society, and Goshen County Community College has devoted special attention to this group of people which is rapidly increasing in numbers each year. Many senior citizens, like high school graduates, want and need further education. Some wish to learn skills for engaging in new kinds of work after retirement, and some wish to extend their knowledge of the world around them to increase the pleasure and enjoyment of the traveling which they plan after retirement. Some may simply wish to extend their general knowledge and their appreciation of art, music, and literature; and some are interested in developing basic understandings in areas of knowledge which were not available to them when they were in school.

In Goshen County Community College's "Senior Citizens Program," all citizens of the county who have attained the age of 60 years may be admitted without charge for tuition and fees to any program conducted by the college, regardless of previous experience or formal educational training.

Sheridan College maintains its articulation with the business community through the Sheridan Chamber of Commerce which recently suggested such programs as Farm and Ranch Accounting and Accounting for the Small Business. In addition to fulfilling these needs, Sheridan College conducts workshops, in conjunction with the local high school, in journalism and speech and drama.

Western Wyoming College has also oriented its community service program to meet specific needs. The college has conducted business surveys, provided speakers for civic and educational groups, participated in a community family conference, and has held civic music programs.

Northwest Community College has somewhat broadened the usual horizons of community service by extending itself beyond the narrow concept of Powell as the "community." The college has opened its dormitories and facilities for conventions, has played host to speech and debate festivals, and has conducted high school workshops attended by upwards of 100 students from towns in Wyoming and Montana. The drama department of the college offers children's shows which play to some 1,200 grade school students from Powell and the surrounding towns and cities.

Since the locale of Casper is largely industrialized, many of the community services which Casper College offers are oriented in that direction. The college sponsors such off-campus activities as a Hot Line Training School, a Welding School, and an industrial program for Pacific Power and Light. In addition, the college contributes to the Civic Symphony, the Youth Symphony, and the Civic Band, as well as other recreation and hobby courses at its own expense. The college faculty members also conduct choral and reading clinics, and workshops of every description, in addition to which they sponsor programs and reviews for local newspapers, television, and radio stations, and offer lecture services to any civic, religious, or educational group requesting them.

Economic Status of Community College Students

It is a general precept that the community college often serves a group with a mean average income of less than that to be found in its four-year counterpart. Indeed, one of the major contributions of the modern two-year college is that it does purport to afford two years of college education to all youth for only a nominal expense. It should be pointed out that the present philosophy in Wyoming, where the student must bear approximately one-fourth of the total cost of operation, is such that the general junior college philosophy is probably obviated in this respect.

Because of the high income per family which prevails in the City of Casper, the average students of Casper College enjoy a relatively high economic status, one which might be equated to that found among students of state colleges and universities across the nation. On the other hand, the economic conditions prevalent in Rock Springs would suggest that the average student at Western Wyoming College represents an economic status of a somewhat lower income group, with some exceptions.

The enrollment of each of the remaining community colleges reflects what might be considered the national norm, in that most of the students are from families which would be classified as middle income. Approximately 45 percent of these students come to college from agricultural-ranching areas, approximately 45 percent from middle income and small business groups, with the remaining 10 percent from very high or very low income groups.

From the statistics available, it would appear that of all the ethnic groups represented in the student bodies of the various colleges, the

Spanish-American group is the largest. Goshen County reports that the Spanish-American people comprise approximately 10 percent of the total county population, while this same group represents only five percent of the college enrollment. The college further indicates that this percentage of enrollments appears to be rising each year.

Public School Adult Education

Perhaps the most important agency for conducting and improving the programs of adult education necessary for our changing society is the public schools. Those agencies that are the closest to the problem can best determine what programs are needed and they have the facilities, both physical and human resources, most capable of performing the job.

Instructional Program. Since there was no summary of what Wyoming's public schools were doing in this area, it was decided that a questionnaire would be sent to all the high schools of the state to determine what programs were in effect and also to see what the thinking of the public school administration seemed to be about various aspects of adult education. In cooperation with the State Department of Education, the Wyoming Education Association, and the College of Education at the University, the Research Office of the Adult Education and Community Service Division conducted a survey. A three-page single questionnaire was sent out; most of the schools completed the form and returned it to the Research Office. Complete tables of programs and participants are included in the Appendix and a summary of the programs reported is given here.

It was necessary to separate the communities and counties that did not have a community college or university from those that did to give a clearer picture. The effort made and the money spent in the community colleges should result in more extensive programs in those communities.

There were, at the time of this study, 17 counties that did not have a community college or university. Out of these 17 counties, five reported no adult education classes being conducted in the public schools. In the remainder of the counties there was a total of 98 classes being conducted and 1,764 people enrolled in and securing benefit from the adult education classes. The largest program being conducted in the public schools was located in Cheyenne with a total of 895 people enrolled in the 52 classes being offered. The smallest community conducting a program was Yoder, a town of 83 people, which had three classes enrolling a total of 37 people. The classes were in veterinary work, welding, and agriculture economics. Other small towns, under 400 people, conducting programs were Burns, Chugwater, Pavillion, Tensleep, Huntley, and Dayton. Many of the larger towns were conducting good programs, among them were Riverton, Lander, and Big Piney.

There seemed to be no specific thing that meant a community would conduct a program, but rather there was a combination of: attitudes of the community toward the program, attitudes of the schools in their responsibility to this field and some persons responsible to work in the general area of adult education. Generally speaking, the larger the community, the more likely it was to have an adult education program, and, of course, the offerings could also be more extensive.

In those communities having the benefits of a community college or a university, a total of 37 classes was offered to 509 people. In addition, the classes offered at the community colleges will be reported in another section of this report. Generally speaking, the chances for a community to have an adult education program if it had a college were greater than those without the college. This was not true in every case, however.

An analysis of the answer to some of the questions is given for the reader's consideration.

Future Programs. In answering a question on future plans for programs, the communities indicated that a substantial increase would be evident in the 1966-67 year. There were 114 new classes planned for the new year.

Administration. In all of the schools surveyed there were only two full-time persons administering programs. Ten schools devoted at least one-fourth of their time to the program and all of the rest devoted varying amounts from none at all to 25 percent. In this respect, only a small effort is being made at the public school level.

Financing. Of those schools that answered the question concerning the method of financing, the most used method was self-support by tuition. Two schools reported the use of funds from general operating budgets and 12 more a combination of operating funds and tuition. One possible method of operating programs at the public school level is the 2½ mill levy. Surprisingly enough, not one school used this method of financing the adult education program. It is strange that a tax which could be used, and evidently was meant at the time of its authorization by the Legislature upon a vote of the people to strengthen the adult education of the public schools, would not be used by at least a few of the more progressive school districts.

Community Attitude Toward Adult Education. The general attitude in the community, according to the response of school administrators, toward adult education programs indicated that there was little or no interest in over half of the districts. Some of the lack of interest was due to the lack of resources. In answer to the question, "What is the general attitude in the community toward an adult program?" the responses were:

A. Adults generally not interested, 25.
B. There are presently too many activities for adults, 16.
C. Some interest but lack of resources for program, 31.
D. Much interest, 16.

Assurance of Success. A question worded, "Which one thing listed below would most help to assure the success of your adult education program?" was answered in the following manner:

A. A full-time person trained in adult education, 17.
B. Additional money for program experimentation, 32.
C. Better community acceptance, 20.
D. More assistance from the University, 3.
E. Others (list), 3.

Responsibility. To the question, "Who should be responsible for the technical, vocational, or retraining programs in Wyoming?" a decided majority of the people thought that the State Department of Education was the one that should be responsible. Of those who answered, 29 thought the public schools should be responsible, 37 thought the State Department, and 16 thought the colleges and universities should have the most responsibility. This represents 45 percent for the State Department, 35 percent for the public local schools and 20 percent for the University or community colleges.

Selection of Adult Instructors. One other question of general interest was the selection of the teaching faculty. The selection of the teacher is the most important factor in the educational enterprise other than the students themselves. As was expected, most of the teachers were selected from the public school faculty. As reported by those that answered the questionnaire the results were as follows. "Where do you select instructors?"

A. The public school faculty, 55.(45%).
B. Certified teachers in the community, 30 (25%).
C. Local skilled and professional people, 35 (30%).

One of the purposes of the study of the public school adult education classes was to see if a participation rate could be worked out. This would give all schools some idea of what they could be doing. Table XLVI shows the various counties and the actual rate of participation and the number of people that could be in the program if the rate shown would be reached. Not shown in this table are the community colleges or the University of Wyoming.

The adult rate of participation in any semester is shown to vary from a low of zero to a high of 29.0 in Sublette County. A rate of 20 people per 1,000 population on a county-wide basis was thought attainable. Only two counties, Sublette and Weston, are at this level at the present time. The total number of people participating was 1,645. The rate of 20 people per 1,000 would increase this number to 3,973. This is not a rate to be expected in one year but rather should be a two-year goal (see Table XLVI).

Applying the same concept to the programs, cities in Wyoming would, likewise, show a substantial increase in the number of participants. In determination of rates for cities a rate of 25 people per 1,000 population in the larger cities and a rate of 50 people per 100 population in the smaller towns was used (see Table XLVII). Although at first this may seem backwards, it is based on two assumptions. The first is that where programs are started in small towns a feeling of companionship makes the program successful. This is evident in such places as Yoder, Huntley, Burns, Pavillion, and others. Because of the very nature of small towns, the communications, and the close fitting of programs to needs, the rate of participation, at least in Wyoming, is higher. A second reason is that to be able to conduct classes in smaller communities, it is necessary to contact and have participation by a greater percent of the population. This is necessitated by the present methods of financing which insist that schools for the adult taxpayers must be almost completely self-supporting.

TABLE XLVI

ACTUAL AND POTENTIAL ADULT EDUCATION PARTICIPANTS IN WYOMING COUNTIES

County	Population of County	Ad.Ed. Classes in County	Total Enrollments	Participation Rate Actual Rate	 Theoretical Rate Per 1,000 Inhabitants
Laramie	63,570	52	895	14.1	1,260
Carbon	14,090	5	45	3.0	280
Platte	7,220	2	24	3.3	145
Big Horn	11,620	-	-	-	230
Fremont	28,860	19	309	10.7	575
Lincoln	9,260	2	30	3.2	185
Converse	6,160	5	79	12.8	125
Niobrara	3,720	1	9	2.4	75
Hot Springs	6,390	-	-	-	130
Johnson	5,510	-	-	-	110
Campbell	7,140	-	-	-	145
Crook	5,020	-	-	-	100
Uinta	7,400	3	55	7.4	150
Washaki	7,650	4	41	5.4	155
Weston	6,990	0	141	20.2	140
Teton	3,900	1	28	0	78
Sublette	4,410	4	130	29.0	90
			1,645		3,973

TABLE XLVII

CITIES WITH ADULT EDUCATION PROGRAMS

Name of School	Population	Classes	Total	Participation Rate		No. of Participants
				Actual Rate	Theoretical Rate	
Pinebluffs	1,121	2	42	37.5	50	65
Burns	225	1	15	66.7	50	15
Cheyenne	45,000	49	838	18.6	25	1,125
Saratoga	1,133	4	27	23.8	25	28
Chugwater	287	2	24	83.6	50	24
Riverton	6,845	8	150	21.9	25	170
Shoshoni	766	1	32	41.8	50	38
Lander	4,182	7	81	19.4	25	105
Pavillion	190	2	20	105.3	50	20
Dubois	574	1	26	45.3	50	26
Kemmerer	2,028	2	30	14.8	25	50
Glenrock	1,584	3	52	32.8	25	52
Douglas	2,822	2	27	9.6	25	70
Lusk	1,890	1	9	4.8	25	50
Evanston	4,901	3	55	11.2	25	125
Worland	5,806	2	22	4.0	-	145
Tensleep	314	2	19	61.0	50	19
Big Piney	663	4	130	196.0	50	130
Cody	4,838	3	33	6.8	25	120
Yoder	83	3	37	445.7	50	37
Lingle	437	2	12	27.5	50	22
Huntley	335	1	20	59.7	50	20
Dayton	333	1	9	27.0	50	16
Jackson	1,437	1	28	19.5	50	72
			1,738			2,544

A third group of cities that reported no programs is listed with the number that could be expected to participate (see Table XLVIII). Combining the possible participants from cities now conducting a program and those not conducting programs would increase the number from 1,738 to 2,572. The totals from these would go a long way toward filling the needs for education in Wyoming. It would also build a nucleus around which vocational, technical, and other future educational needs could be turned into a reality.

Figures used in this section of the report varied because of duplication of people in classes and programs and in multiple answers to the questions on the questionnaire.

Educational Programs of State Agencies

A number of state agencies sponsor or conduct adult education courses. The State Department of Education and the State Library sponsor cooperatively with other agencies adult educational programs. In addition, in-service programs are conducted by many of the other state agencies. The Game and Fish Commission, the State Highway Department, and the State Health Department conduct extensive in-service programs. The activities of the State Department of Education and the State Library are considered here.

State Department of Education Programs.

Although not intended to be a complete summary of the various aspects of adult education conducted by the State Department of Education, a summary of these programs and some information as presented by the State Department is included in this section of the report.

One of the most useful programs for adult citizens is the high school equivalency testing program. Veterans, servicemen, and non-veterans of Wyoming are eligible to apply for a High School Equivalency Certificate.

TABLE XLVIII

THEORETICAL ADULT EDUCATION PARTICIPATION IN CITIES AND TOWNS OF WYOMING NOT COUNTING ADULT EDUCATION CLASSES

Name of School	Population	Theoretical Rate	Number of Participants
Afton	1,337	25	35
Baggs	199	50	10
Bairoil	300	50	15
Basin	1,319	25	33
Buffalo	2,907	25	75
Cokeville	545	50	28
Cowley	459	50	23
Edgerton	512	50	26
Gillette	3,580	25	90
Green River	2,286	25	57
Guernsey	1,100	50	55
Sunrise			
Midwest	900	50	45
Pinedale	965	50	48
Lovell	2,451	25	61
Rawlins	8,968	25	224
Sundance	908	50	45
Thermopolis	3,955	25	99
Wheatland	2,350	25	59
Total			1,028

In order to apply they must meet the following requirements:

1. Candidates must be legal residents of the State of Wyoming which requires one year's residence in the state, or previously have attended school in Wyoming, or service personnel stationed in Wyoming.
2. The High School Equivalency Certificate will not be issued until the applicant has reached the age of 20 if he is a veteran or serviceman and 21 if a non-veteran.
3. A formal application must be filed with the State Department of Education on a form supplied by them.
4. Applicant must pass the standardized USAFI tests of General Educational Development with acceptable scores.

Upon successful passing of the GED, a certificate will be issued by the State Superintendent of Public Instruction. The tests cover five areas: (1) The grammar test measures ability to use correct punctuation, spelling, grammar, and vocabulary. (2) The social studies test measures ability to read and interpret correctly passages in history, economics, and world events. (3) The natural science test measures ability to interpret passages dealing with the different aspects of science encountered in everyday life. (4) The English literature test measures ability to interpret passages of prose and poetry. (5) The general mathematics test measures ability to use the fundamentals of arithmetic such as are taught in a high school general mathematics class. There is a cost of $10.00 for each applicant who takes the test. Testing centers are established in Casper, Cheyenne, Kemmerer, Lander, Laramie, Powell, Rock Springs, Sheridan, Worland, Cody, and Glenrock.

From July of 1964 to July, 1965, the following GED certificates were issued (see Table XLIX). This service is important to anyone who, because of any reason, did not attain a high school education. In most fields of apprenticeship it is necessary to have a high school diploma or a certificate. These certificates are also acceptable at the community colleges or University

TABLE XLIX

GED CERTIFICATES ISSUED 1964-1965

	Veterans	Non-Veterans	Total	Men	Women
July, 1964	7	2	9	7	2
August, 1964	19	12	31	20	11
September, 1964	11	4	15	13	2
October, 1964	17	14	31	20	11
November, 1964	12	12	24	14	10
December, 1964	20	4	24	21	3
January, 1965	13	10	23	19	4
February, 1965	18	6	24	20	4
March, 1965	19	14	33	24	9
April, 1965	17	17	34	21	13
May, 1965	13	19	32	24	8
June, 1965	16	16	32	20	12
Total	182	130	312	223	89

for further work in lieu of a regular diploma. Many other programs that might normally be closed to older citizens can be opened through a program of testing such as this. Table L gives a summary of adult programs.

Libraries. Under the supervision of the director of the Wyoming State Library, in the spring of 1966, a survey was conducted of the libraries of Wyoming and within the survey was a section on adult education. At the request of this office, the State Library supplied a copy of the tabulated results of the adult education section. The following is a summary of this report.

In 1965 five libraries were conducting adult education programs, 20 were not, and four did not answer. Before 1965, five libraries had conducted programs so there was no real change during the year. Seven of the libraries were planning programs for 1966. In planning the budget for the year only three had allowed for the development of an adult education program. When asked to list in order of importance the reason for not engaging in adult education, there seemed to be no one outstanding reason, but answers ranged over all areas such as lack of space, time, staff, experience, budget, and undetermined needs.

A question on programs of library service given to adult groups upon request had 26 performing this function, 18 did not, and 15 either had no requests or stated that the question did not apply to them. Of the libraries, 17 initiated these programs while the rest either did not or would not believe that the question pertained to them. Book reviews were given at 15 locations in the state and 17 gave book talks. The reasons why the libraries did not engage in the activities were diverse, but most of the libraries said the question was not applicable to them.

TABLE L

ADULT EDUCATION PROGRAMS UNDER THE SUPERVISION OF THE STATE DEPARTMENT OF EDUCATION VOCATIONAL DIVISION 1965-1966

NAMES OF PROGRAMS	NUMBER OF PROGRAMS	NUMBER OF INDIVIDUALS INVOLVED
ADULT BASIC EDUCATION	28	401
HOME ECONOMICS (1964-65)		
Adult Education	54	708
BUSINESS AND DISTRIBUTIVE EDUCATION		
Business and Office		
Post Secondary	5	150
Adult	3	75
Distributive Education		
Post Secondary	1	5
VOCATIONAL AGRICULTURE		
Adult Farmer Classes		
Welding	8	95
Misc. Farm Work	1	9
Animal Nutrition	1	10
TRADE AND INDUSTRIAL & TECHNICAL EDUCATION		
Two-Year, Post Secondary		
Trade & Industrial (Grade 13-14)	2	29
Technical (Grade 13-14)	1	33
Practical Nurse Training	1	21
Adult Evening Classes	*50	1,084
Totals	155	2,620

*Many of the indicated programs for adults are short programs geared to adult needs.

Forty-seven libraries did, upon request, develop subject bibliographies for adult groups but only 10 of these did this at their own initiative. In the audio-visual section only one library supplied films from their own collection to adult groups, although seven did supply films by interlibrary loan service.

The libraries are, through their use and usually their location, sometimes needed for adult group meetings. In responding to a question of this nature, the number of groups using the facilities for meetings ranged from 10 to none. Forty-nine did not while 16 did allow such activities.

In cooperation with the Adult Education Department of the University, six libraries had, during the year, co-sponsored some adult education functions.

Material for adult illiterates was provided by six of the libraries, and one each provided material for military installations and tourists. In providing material for churches and other similar groups, 11 libraries had secured special material. The groups that the libraries worked with were as varied as the towns and organizations themselves. There seemed to be no pattern to these organizations. Help was extended to the program planned by 16 of the libraries. Twenty-eight libraries had made special efforts to place library materials at convenient locations or heights for adult and older groups.

The survey generally showed that if requested the libraries would respond to the requests, but for a variety of reasons the libraries did not reveal themselves as much a part of the adult education picture as would be desirable.

Apprenticeship and Industrial Training Programs

One type of adult education is on-the-job training in the form of apprenticeship programs or industry-sponsored programs. These programs are considered here.

Labor Organizations and the Bureau of Apprenticeship and Training

One of the most important methods of training for skills in Wyoming is the apprenticeship program. It assumes even greater importance when emphasis on vocational education is weak in the public schools and the community colleges. In Wyoming there are very few opportunities for the youth to attend a vocational or technical school. The start made by the community colleges and the increase in money and resources that they are now obligating will, it is hoped, relieve the situation somewhat. Until that time, the bulk of this type of training must be met by apprenticeship training and by special programs of training by the various state and federal agencies.

A program of apprenticeship training depends upon close cooperation between the laborer and the employer. The extent of the program is in direct ratio to the economy of the state. If times are prosperous and such trades as construction are high, then the demand for skilled craftsmen will result in an increase of apprentices. It is also true that if there is little opportunity for both the previously trained individual and the new worker, then they will be forced to move elsewhere for employment. An economy that has many ups and downs would seem to have a tendency to complicate the education and retention of skilled craftsmen.

Most of the apprentices are between the ages of 18 and 27 unless they are veterans. The majority of the trainees is male. In almost all categories a high school education is necessary for entrance into the training. In the case of such trades as barbering it is necessary to have had trade school training before entering the apprenticeship stage.

The number of people participating in the program in Wyoming varies from about 285 to 350. These trainees are able to travel in and out of the state in multi-state programs and over several counties in the state in order to be gainfully employed in their particular program. An arrangement with the State Department of Education and with local school districts and community colleges allows the theory portion of the training, a minimum of 144 hours per year, to be conducted in night school facilities. This theory assists the trainee in his goal of productive job competence. A cooperative relationship is maintained with the State Employment Service. Through this arrangement testing of prospective apprentices and referral of individuals to the committee are accomplished.

The Bureau of Apprenticeship and Training is also instrumental in starting on-the-job training and special workshop type instruction as the need becomes apparent. These classes are necessary for upgrading and for new skills in a rapidly changing technical world. Careful consideration is given to labor and management in all programs to prevent unfair advantages or competition. Some of the classes conducted in this area have been blueprint reading, cable replacing, welding courses, transit use, electronics, supervision training, and electrical and industrial maintenance upgrading.

Comparing reports of apprenticeship programs in Wyoming in 1965 and 1966, there was only a slight change in the total numbers and the number in individual categories, representing more or less a stable construction period.

Trade Classification	Number 1965	1966
Bricklayer, Stone Mason	18	18
Cement Mason	1	1
Carpenter	47	49
Electrician	44	48
Floor Coverer	4	4
Lather	3	3
Operating Engineer	5	5
Painter-Decorator	3	3
Plasterer	2	3
Plumber-Pipefitter	42	36
Roofer	27	4
Sheet Metal Worker	18	23
Tile and Terrazzo Worker	2	2
Aircraft Mechanic	2	2
Automotive Body Builder	1	1
Automotive Mechanic	10	10
Machinist	3	10
Miscellaneous Metal Trades	4	4
Butcher-Meat Cutter	1	1
Light and Power Electrical Worker	43	42
Lineman	14	20
Electrical Worker (other)	6	6
Maintenance Mechanic-Repairman	4	3
Barber	13	21
Ironworker	6	--
Heavy-Duty Equipment Mechanic	--	2
Compositor (Printer)	--	3
Printing Pressman	--	1
TOTALS	323	326

Training of Workers in Industry

Another type of on-the-job training is conducted by industry and business. In most cases, the education of employees is a continuous program. It is one that combines "on-the-job" experience, some book work, and informal programs. It is one in which skills are so tailored to a specific job that a school would be difficult to design. There are, however, many skills that can be achieved by pre-work training, and these skills would prove of immense benefit to both workers and employers.

Most of the employers and companies indicated they would work in a cooperative venture with the community colleges or University or even the high school but they are not sure just how to start. The same feeling seems to be true of the colleges. Both parties seem to be saying, "if someone would show me the way." Most of the needs are of a short-training-period-of-time type. Most of the employees could not leave work for any length of time. Most companies and employers are more than willing to work out schedules and provide space for "on-the-job" or "near-the-job" training.

The organizations such as the Wyoming Oil Industry have training outlines at their disposal. These outlines are developed by the American Petroleum Institute. They contain suggestions, materials, type of training, methods, and a host of other types of information. When jobs are common and companies are huge or have offices and industry spread throughout wide areas, it is common and necessary to have a basic related course or outline. This is not true of the majority of smaller locally owned businesses. These outlines are also of help to other related type industries.

In visiting several of the building trade companies, such as lumber yards, it became evident that a continuous program of training is necessary. Most of the needs of this type are met by apprentice training. Close cooperation between companies, the Bureau of Apprenticeship Training, and the labor unions has resulted in a program sufficient to meet the needs. One very serious problem is fluctuation of employment brought on by seasonal building and the ups and downs of home and business construction. This is also true of highway construction and the people employed in this field. There was expressed a need for better awareness about the opportunities in trades by the high school student. It was also expressed that a great need exists for pre-vocational, pre-technical training in the high schools.

Education for trades, if sought in a school-type setting, must be secured outside the state in most cases. A visit was made to one of the schools supplying at least part of Wyoming's needs. This school was the Salt Lake Technical Institute. The survey team was convinced that at least part of the answer to training of skilled people was in such schools. Regular recruitment of graduates of this Institute and the one at Milford, Nebraska, was carried on by several of the building trades. The quality of the graduates of these schools was high and the demands for their service high.

The associations similar to the Wyoming Truckers, the Farm Bureau, and Retail Merchants were all receptive to cooperative ventures in the workshop-type upgrading of classes. In most cases many of the workers employed were not as qualified as was desirous. Basic skills in typing, English, accounting, and shorthand seemed in need of improvement. Although some help in these areas is provided by the community colleges and adult education classes offered by the public schools, most of the training in clerical skills was either of "on-the-job" or experience types. Most of the education of terminal secretarial skills was provided by out-of-state schools. Most of the schools of this kind were in Denver, Salt Lake City, or some other nearby city. A real need for better programs in secretarial science courses and skills was evident in Wyoming. Expanded high school training in business and distributive education seemed a logical step to overcome, to a degree, the shortage of skills needed in this area.

In Wyoming one of the fastest developing mineral areas is trona, and the mining and refining of this product is fast becoming one of the major industries of the state. The use of this product and the combination of trona and other minerals found in the state hold a promise of development for the southwest part of the state beyond what anyone thought possible a few years ago. The tour of the complete operation of a trona factory resulted in the realization that in the smaller, highly automated industry a specialist is a rarity and that training for several related fields is necessary for successful operation. In one underground operation the repair of equipment is carried on. The shop, even underground, is modern, up-to-date, and huge. A person working in this shop must first be a skilled diesel mechanic. There is also the need to be skilled in metal working. This is still not enough as there would be many times when not enough work to employ a person full-time would be available, so the skill of welding is also needed. Underground operations depend on electricity to a great extent, so skills in electricity are necessary. Ventilation, always a problem, requires a person skilled in sheet metal work and motors. When all of these skills are necessary to work successfully and for the economic operation of such a mine, it is easy to see that what is required is not a specialist but a generalist. This generalist must be proficient in all of the skills. This gives some hint about what type of course the high schools must provide as pre-vocational training.

This problem of many skills needed for economic operation of small industries was brought about in another way on a visit to the cheese factory in Thayne. In the manufacturing of cheese and dairy products, it is necessary to control temperatures at all times. The operation of a small factory prohibits the employment of a full-time refrigeration specialist. It is also impractical to have one fly out from Rock Springs or Salt Lake City when an emergency occurs. Special help in electronics, electricity, and control of steam and air is also needed. In larger operations each of these would be the area of a specialist. In

Wyoming's smaller industries it is necessary to have several of these areas combined in one job. Education in our high schools must then give an introduction to all areas.

In two other industries again it was pointed out that one man may need more than one skill to be an employee that can contribute to the success of the enterprise. These were the aircraft plant in Afton and the new gyp board plants starting in several locations throughout the state.

One skill that seems to be needed in more and more jobs is electricity and electronics. Talks to operators of garages showed the need for basic understanding of electricity and electronics in the servicing of autos and in the operation of many of the new testing devices. No industry is without the need for people knowledgeable about electricity or electronics. For a moment think what happens when you lose your electricity. If you are in rural areas your water is shut off because of the pump. Everywhere the heating or ventilation is gone. It is hard to tell time, to cook, to find recreation, to cut meat, to clean your teeth, or to do many of the repair jobs in our modern society without power.

Who turns on the lights at night? In many cases it is an electronic switch that through a photoelectric system determines that it is dark enough for artificial lights to be turned on. A great need for understanding by everyone, for general skill by many, and for specialization by a few in electricity and electronics is evident in all parts of Wyoming. The job is here. It can be overcome by upgrading courses in public schools and in workshops, by specialized courses in our colleges, and by generalized and skill courses in our high schools.

Recent developments in techniques of computer use will change both the use of the machine in Wyoming and the need for people to operate and direct the functions of such machines. Remote stations connected with the central computer and even connections between computer stations have radically changed what can be done in smaller operations. Evidence that this change is already upon us can be seen in the computer operations at the Husky Refinery in Cody. A detailed analysis of each oil well, its production, what it contains in the way of sulphur, water and chemical content, is made by the computer. Another analysis of the sales of all the outlets of the company and its stations is also made. Combining these with the production and capabilities of the refineries determines on a cost/profit ratio which wells will be pumped into the refinery for processing and how much from each well. Be sure you pick out the product you wish as it may determine which well will be utilized in the processing of products tomorrow.

Training of operations of computers and of the various machines making up a complex is left mostly to out-of-state agencies. In some cases, companies have a training course set up for new employees. A start has been made by two of the community colleges to help in this vital and growing field. Arrangements between the computer center at Cody and Northwest Community College at Powell have been made and should produce ever increasing benefits to both parties concerned.

The application of large computers to relatively small companies or industries has been slow in Wyoming. Separated by long distances and hindered, at least in this relationship, by mostly small cities, the use of the computer has been slow. Many people misunderstand what can be done or what a computer system really is. The advent of the computer has been so swift that many people have been deprived of any understanding of them. Development of remote stations which can directly control computers many miles away will allow this tool to be available to every city in Wyoming.

Remote stations at the community colleges and the Air Force school connected to the computer are in the process at the present time. With these stations it will be possible to program and feed data into the master computer. Courses of instruction on programming and theory can be carried on without the necessity of a costly computer at each location. With improved communication it is only a matter of time until a master computer at a central location will be available for short runs, short time rentals. Each community will have the best computer available on a pre-scheduled allotment. With changes such as this the necessity of courses on computers, on programming, and on auxiliary equipment is evident.

Another industry that up to now has depended primarily on outside schools for training has been heavy equipment operators, including truck tractors. It is becoming an increasingly complicated job to operate the new complex equipment. It is also very unwise to place a partially trained person on an expensive piece of equipment capable of destroying or damaging equipment, project, or people. Some help from the community colleges may be forthcoming in the future.

Education in State Institutions

One area that is often overlooked in an investigation of educational needs is the institutions supervised by the state. It is due perhaps to a feeling that in these places there are people we have failed or who have failed us and the less said the better. It was felt by the committee and the research group that these people are in need of help, that the directors of the institutions are in need of better public understanding, and that a tragic loss in money and human resources results when neglect or unconcern occurs.

State Penitentiary

The educational background of the "average" inmate in the State Penitentiary varies from illiterate to a college education. Entrance statements show an average of 8.4 years of formal education. Tests of achievement by using the Stanford Achievement Test, however, show an average grade placement of 7.4 years. Most inmates dropped out of school at the beginning of the ninth grade. The reasons are as varied as those from any other group of dropouts. The main reasons seem to be dissatisfaction, broken homes with little or no supervision, automobiles to keep running, easier to enjoy themselves, etc.

Most of the men were either unemployed or were bouncing from menial task to menial task before incarceration. Again, unemployment seemed to be due to a lack of any employable skill, education, or drive.

At the time of the visit there were approximately 300 inmates and about 67 employees. The estimated cost of maintaining an inmate for one year was $1,500. Not added to this cost is the expense to the various towns of keeping the family of the convicted man or the loss in human resources brought about by the incarceration.

There are at present two basic programs of education. The first is the so-called academic and is designed to teach the inmates, if necessary, to read and write and to attain, if possible, a high school diploma. Correspondence lessons are used to supplement the offerings available at the prison.

Vocational education is offered in several areas. Classes are offered in mechanics, both diesel and gasoline, electronics, business machine repairs, carpentry, and several other fields as interest is indicated.

The schools operate on a 10-month basis, six hours a day, five days a week. Many new areas of vocational training could be started if equipment and supplies could be obtained.

It is difficult to state in a few words the needs of the system. Education, as it is being practiced now, is a new concept to the prison, and equipment, supplies, books, and audio-visual aids are all needed. Much of the equipment in use was built from odds and ends, such as the dip tanks in the business machine repairs school, which were made from old soft drink coolers. Equipment of any nature could be used but more results would be obtained if planned purchasing could be initiated instead of allowing the courses to be determined on what can be scrounged or secured through donations.

In determining what effect the education program has had on the inmates, only a short analysis can be made. The program has been in operation only a short time and no exact results can be determined. The school program had graduated 132 men as of October, 1966, and approximately 70 of these men had been released from the instituion. Of these 70 men, six had returned to the institution. This is a recidivism rate of eight percent as compared to a national rate of approximately 75 percent. The warden reported that previous to this time Wyoming's rate was higher than the national. Exact figures of those who may be in other institutions are not available. A better evaluation of this recidivism rate can be made after a lapse of five years or more to secure both sufficient numbers of graduates and sufficient passage of time to give a truer picture of the effectiveness of the training.

Wyoming Industrial Institute

Late in September of 1965 a visit to the Wyoming Industrial Institute was made by two members of the research staff. The visit encompassed both a first hand look at facilities and programs as well as the collection of information.

The physical plant for the education of the boys is a new and most excellent building but it seems to be lacking in equipment and programs of a vocational nature. It was believed by the research group that more money for equipment and teachers in the areas of vocational education, all types, was needed.

During visits to the public schools and educational institution, the remark was made that the boys dropped out of school because of a felt need for a car. This led members of the research team to believe that in a respect a love affair or a marriage leads to a high loss of boys through dropout. This love affair or marriage is not for or to a girl, but to a car, strange as this may seem. Perhaps programs designed to reach this need in boys can be accomplished at an institute like Worland. A chance to teach math, composition, mechanics, and other related subjects designed around a vocational-oriented program of auto mechanics may have real possibilities.

The ages of the boys committed to the institute range from 10 to 21. The educational achievements of the youth range from third or fourth grade to some who have had post-high school studies. Over half of the boys are dropouts. They are generally one or more years behind their peer group in grade level achievement. This wide variance necessitates an educational program of considerable breadth.

The institution conducts a regular junior and senior high school program with remedial courses in English, mathematics, science, and social studies. Electives are offered in art, mechanical drawing, and commercial subjects. Some vocational education is being started in auto mechanics and shop. If at all possible, the boys are brought along to a high school diploma. In addition to the regular classroom program, an effort is being made to develop the necessary job on the grounds with an educational or on-the-job aspect. A further effort is made to work through the vocational rehabilitation program and the Wyoming Employment Service for placement of boys in jobs in the local community.

The effectiveness of the instituion in providing the boys with skills and attitudes that enable them to make a successful adjustment when they are released has increased but still presents a major problem. Approximately 30 percent of the boys either return to the instituion or to the state penitentiary after being released. This does not vary greatly from the national average. Increased effort is being made, and hope for greater success is held for the future.

State Training School

At the time of the visit to the home in Lander, there were 715 residents ranging in age from eight months to 82 years. These people are mentally retarded or epileptic. Education carried on by the hospital is primarily of the nature of special education. A serious lack of programs for training teachers at the University was mentioned by the workers at the hospital and was also mentioned by the directors and superintendents of other institutions. A new program started at the University of Wyoming will be a start toward meeting this need.

Because of the very special nature of the residents, most of the training or education is of an industrial or workshop need. Many of the jobs performed at the home are also worked into an on-the-job training program.

There are approximately 290 employees at the Lander home and many of these people are non-professional. A serious lack of educational opportunities exists for these people. Their effectiveness and help to the work would be increased if some method of supplying special courses could be devised. The professional staff could also benefit from upgrading or workshop-type classes. The areas of need range from courses or instruction in understanding the people and the institution, methods of instruction, to psychology, testing, and other special lines of endeavor.

The understanding necessary for success in this area of care is two-fold: first, on the part of the employees, and second, on the part of the general public in what can be done and what is needed. Few of these people will become totally operational citizens but many can become partly self-sufficient and functional in a normal setting.

Wyoming Girls' School

The educational background of girls entering Wyoming Girls' School is characterized by a singular lack of scholastic accomplishment. They have been failing for at least one year, and in most cases two years, before being committed. Prior to this time they have been on the verge of failing. Seldom, if ever, have they experienced the joy of receiving the top grade in their class. They constitute a part of that great grey mass in our public schools today, the under-achievers. Tolerated but seldom taught, they learn to sit quietly in the classroom absorbed in their own world, seemingly attentive but hearing little, absorbing less. They are carried along by the more able or attentive students in class who obligingly furnish daily assignments and an occasional peek at test answers. They do just enough to get by and to be passed dutifully along to junior high school and high school. Here the problem is accentuated by the onset of puberty and the changing social status of the girl. Boys and dating become all-important, and school, which commanded little enough of their attention before, now gets none. The net result of this process is ultimate failure.

A contributing factor, if not the major factor, in the educational background of the girl is her home environment. This is generally poor, not necessarily in material things but in attitudes. Parental attitudes toward schooling and the necessity for gaining a good education are negative. Too often they are so wrapped up in their own problems they cannot be bothered by the child's problems. This includes what the child is doing in school. This lack of concern is reflected by the fact that most girls committed have attended from four to 10 elementary schools. Because of this unconcern, the girl has not been encouraged to study. Therefore, she has not developed study habits. She has not been encouraged to read. She may be an adequate reader but she will do little outside reading other than movie and romance magazines since these are many times the only type of literature readily available in the home. The result of home and school indifference in a girl is actually or academically one to three years under normal age-grade level when she is committed. She is one whose attitude toward school and study is completely negative, who has not developed any of the necessary study tools, who considers teachers to be at best indifferent and at worst an enemy to be thwarted, who considers cheating the best means to obtain grades since she feels cheated in her previous attempts at learning.

Ability has little to do with the girl's failure. About one girl in 10 has a below average intelligence quotient. The quotients are skewed to the above average with the mean IQ being 105 for the girls presently in residence. The range, at present, is from 76 to 150.

The educational program of the school is designed to meet the needs of girls who are not achieving scholastically. Because of this, the first goal of the school is to awaken a desire to accomplish and achieve on their own. The second goal is to motivate them to seek more knowledge when they leave the school. Third, they need encouragement to reach the proper grade level while at the Girls' School. Finally, they must be prepared to return to their communities. To reach these goals, standard courses in high school and junior high school, supplemented by courses in life adjustment and practical home economics, are offered to the girls.

The high school curriculum includes the following courses: English I, II, III, and IV; Social Studies I, II, III, and IV; Typing I; Office Practice; Notehand; Bookkeeping; General Business; General Math; Algebra I and II; Library Science; and Spanish. In order to broaden the high school curriculum the school has experimented with the use of programmed teaching materials. These include: English 2600 and English 3200, to be used as make-up courses for girls who have previously failed first or second-year English; Chemistry; Physiology; General Science; General Math; Algebra I; Geometry; Spanish; and Notehand. These courses are offered only if the girl needs extra credits to attain age-grade level. It is felt that the girl will have a better chance of succeeding in the public schools if she has attained the proper grade level for her age. Most of the girls carry four academic courses plus life adjustment. Class periods are 55 minutes long. The teachers devote approximately 35 minutes to class instruction, demonstration, and discussion and 20 minutes to supervised study time. The girl is required to devote an additional 60 minutes in the evening to supervised study.

Girls who have not completed junior high school are placed in junior high courses presented in a unified classroom. These girls meet with their teacher in a three-hour block time. Standard junior high subjects are covered during this period with the exception of mathematics. This is taken with the high school general mathematics class. The purpose of this is to introduce both groups to modern mathematics. In addition to the above, all junior high girls have a one-hour study hall in the morning and one hour of required study time in the evening.

During the 1964-65 school year, remedial junior high and remedial high school subjects were offered by using the unified classroom approach. An attempt was made to determine each girl's academic level and to allow her to achieve on this level. For many girls this was the first time they had been able to realize a sense of accomplishment from school. The main problem was that of finding an adequate supply of high-interest-low-achievement-level materials. Most of the girls in this program were placed back in their communities the past year. Therefore, there have not been enough girls who needed remedial work to continue the program this year. If sufficient need is seen for this later, the school will again offer such classes.

The life adjustment program, while part of the high school curriculum, deserves special mention since it serves a dual purpose. First, it attempts to get the girl to relate her problems to those of other adolescents. She may then realize that many of her feelings and frustrations are common to this age level and are not insurmountable when properly approached.

Second, it teaches the girl to adjust to family and community living in preparation for the time when she will leave the school to take her place in society again.

Practical home economics, though not a part of the regular academic program, contributes materially to the girl's education while she is at the school. It is here that she is taught how to keep house adequately, using the most efficient methods; she works in the kitchen and learns how to prepare and serve food; she works in the laundry and learns by experience how to prepare clothes for washing, how to operate a washing machine and dryer, and how to iron and store clothes properly; she attends personal grooming classes to learn how to care for her personal appearance; and she attends sewing classes to learn to make her own clothing and clothes for others. All of these experiences are designed to aid her in becoming a successful future homemaker.

From very rudimentary beginnings, Hilltop School has gradually evolved into an accredited school with facilities capable of offering a fairly comprehensive education to the girls resident at Wyoming Girls' School. The present biennial budget reflects the administration's concern with the educational needs of the girls. However, there are still several areas that could be improved. Among the most pressing of these is the need to be able to offer competitive salaries to teachers who are employed on a full-time basis. There is a need to expand the school's program in the area of recreation to include a full-time recreation and physical education director. The music program should include both vocal and instrumental instruction. Thus the girl is prepared for participation in these social activities of her home high school. There is a need for a full-time home economics teacher to coordinate the present practical home economics program and expand it into the classroom. Science offerings need to be expanded. As it is, a girl desiring to enter a field requiring a science background, such as nursing, does so at a disadvantage. The reading improvement program should be expanded to teach the basic fundamentals in some cases and in others, speed and comprehension. At present, the reading improvement program is nil. The use of business machines should be taught more thoroughly. There is a present lack in the area of equipment to do this. It is believed that most of the girls, if they do find future employment, will do so in the field of selling. If this is so, it would be suitable to include distributive education as part of the education program. In general, the school's curriculum must be considerably expanded. The main reason for this is that most of the girls come from the larger schools--Casper, Cheyenne, Riverton, etc.--with broad curriculum offerings. They will return to these schools on release from the school. Therefore, the curriculum offering must be as broad as possible to meet the needs of these girls.

It is almost impossible under present circumstances to determine the effectiveness or percent of girls rehabilitated upon their release. They just "drop out" of the picture. It can only be said that it is far too small a percentage.

Parole and other after-care programs are negligible. Many are returned to the school because of failure to adjust to community life. These returned girls have made it very clear that, typically, the lack of supervision and assistance after release was a critical factor in events leading to their return to the institution.

Typically, over the years the average breakdown by counties of girls committed to the school are as follows: Natrona (Casper), 33 percent;

Laramie (Cheyenne), Albany (Laramie), Sheridan, Sweetwater, Park, Fremont, Campbell, Carbon, all average at times from 12 to 15 percent; and the remainder are from other counties throughout the state.

Since it is necessary for the girls to do the work of the institution, they are taught laundry (commercial and domestic) techniques and receive comprehensive training in food preparation. All girls participate in a beginning beauty operator's course where they are screened. Those who have a desire and the ability are allowed to attend beauty college in Sheridan.

State Hospital

When the first visit was made to the State Hospital in Evanston, it was cold and dreary. The visit was soon made so interesting that before we knew what had happened the day was done and the survey team was still asking questions. A survey of adult education needs and attainment was just starting at the hospital. Some help in the questionnaire and in the questions was extended to the adult education director by the Research Office. It was encouraging to see such concern, from the top man to the bottom, for methods of improving the hospital in every way possible.

At the time of the visit there were approximately 650 patients. These were divided into four groups, those needing help in the areas that are generally associated with mental hospitals: the geriatric patients, the alcoholic rehabilitation program, the adolescent treatment program and another service, that of examination of court referred patients.

A very unique arrangement between the public schools at Evanston and the State Hospital enables education of an accredited school to be extended to the children undergoing treatment at the hospital. In addition, the young people are given extensive guidance. At the time of the visit there were 70 teen-age patients.

In determining what programs to start, a complete survey of all the adults, both employee and inmates, was conducted by the hospital staff. The survey was designed to discover (1) the level of educational attainment of the adults, (2) the interest in programs indicated by the adults, and (3) the implications this had for adult education programs.

The survey results indicated that out of 297 employees, 90 have received less than 12 years of school. To remedy this situation an opportunity was provided for adult employees to take the GED Test and also provided them with opportunities for further education on the high school level.

The first step in this direction was the establishment of the adult high school program consisting of the following classes: (1) English essentials, (2) typing, and (3) bookkeeping. A little later two more classes will be added: (4) shorthand and (5) psychology.

The second step was taken late in 1965. The GED Test was given to 29 persons. Twenty of these were employees of the hospital, four were patients, and five were from the community of Evanston. Out of the 29 persons present, 24 passed the GED Test. Each of these 24 persons was granted an Equivalency Certificate on the basis of GED Test scores by the State Superintendent of Public Instruction.

Out of 297 employees, 167 have received less than four years of college. To correct this situation the hospital, in cooperation with the Evanston High School, is sponsoring the following college and university courses:

1. English 38, "Rapid Reading."
2. Special Education 293, "Education of the Socially Maladjusted Adolescent."
3. General Psychology 53, "Fundamentals of Psychology."
4. On the 7th of February a new course was started, Social Work 667D, "Social Aspects of Mental Health."

The above high school classes are sponsored by the hospital without charge to the person attending. The college classes are sponsored by the hospital in cooperation with the Evanston High School. The classes are taught by college professors from Utah State University, Weber State College, and the University of Wyoming. The person attending pays the regular college fee for extension courses. Twenty-six out of the 297 employees have four years of college or more. Graduate courses are being taught for those who wish to further their education. It seemed that 73 of 274 employees desired more education. A program to provide this education is conducted in two ways:

1. If 10 or more have expressed interest and enroll this can be handled as a class.

2. If fewer than 10 express interest their needs must be met on an individual basis.

An objective of the adult education program is to aid the individual in achieving his full potential as a human being and to aid him in becoming a participating member of the community. It was therefore felt that additional money for books to be placed in the library, which is an extension of the adult education program, should be made available. In this way, not only the interests and needs of groups, but also the needs and interests of each individual, can be met.

The adult education program is an invaluable extension of the hospital's therapeutic program. Patient needs were also determined. It was indicated that 69 out of 136 interested patients have received less than a twelfth grade education. The same high school courses offered to the employees are offered to the patients. Patients who wish to take college classes or correspondence courses are first cleared through the Vocational Rehabilitation Department. In this way the patient is aided financially and may, if he wishes, continue his education during his stay at the hospital.

Although this report pointed out the lack of education among both employees and patients and the expressed interests of each, a real problem that yet remains is to stimulate enough interest so that the patients and employees will become actively involved in the program.

A serious problem that was very evident in the hospital and in the other institutions that the research team visited was the lack of supervision available to the patient upon release from the institution in which he had been confined. In the case of the hospital, only one woman was responsible for the entire Laramie-Cheyenne area. To help the hospital realize their goals, it seemed that additional people outside the instituion would greatly strengthen and carry on what had been initiated at the hospital.

Another problem area was in the upgrading and training of special employees. In most cases the particular need would involve only a few people. This made it an expensive process to accomplish.

It was the opinion of the research group that Wyoming has some of the most competent people possible in charge of the various institutions and that assistance to these people in accomplishing their job would pay big dividends to the people of the various towns and cities and to the state in general.

Federally Sponsored Educational Programs

There are a number of adult educational programs in Wyoming sponsored by the federal government. These programs are considered in this section.

Office of Economic Opportunity

During the year 1965 and into 1966 significant changes have been made in education and work opportunities for the less fortunate people of Wyoming. Programs in many areas have been started with funding by the federal Office of Economic Opportunity.

There is one Job Corps camp in Wyoming. This camp is classified as a rural camp and is located in Casper. The responsibility of conducting this camp is vested in the Bureau of Reclamation. A rural Job Corps camp is one which takes underprivileged youth with less than an eighth grade education, and, in small camps, teaches them habits of work, health, and responsibility. The educational phase tries to bring them to a level sufficient for them to be transferred to an urban camp in which they will be able to seek a high school education.

In 1965 only one Neighborhood Youth Corps was in operation in Wyoming. This was in Casper and entailed a summer program. It allowed youth to work on non-profit public jobs and had a two-fold purpose: (1) to create jobs for youth and (2) to allow communities to be able to perform necessary tasks that might not have enough funding to perform properly. The success of the program in Casper and its help in alleviating some of the conditions pertaining to a high rate of juvenile delinquency--lack of paying jobs for youth, and too much spare time for idle hands--led other communities to apply this program. A program designed for summer or one designed for the regular school year is possible. Projects that were completed in 1966 were conducted in Kemmerer, Casper, and Laramie. Presently being conducted are projects in Evanston, Fort Washakie, Cheyenne, Casper, Laramie, Worland, Thermopolis, and Kemmerer.

Work Study programs designed to help needy university and college students were financed for all Wyoming and out-of-state youth in the University of Wyoming at Laramie, in Casper College, and in Northern Wyoming Community College at Sheridan.

Development and research projects designed to discover reasons for poverty and to devise programs to help alleviate the conditions were granted to the University of Wyoming. Technical assistance to all communities is available from the University for putting into effect programs that a community may decide will help problems of poverty, employment, and education.

Community Action programs are attempts to allow a community to analyze its own particular problems and to design programs under the Office of Economic Opportunity finding to best meet the needs that have been determined by the community. If a community can secure the proper people and support of all groups, the possibilities for help and benefit are almost unlimited. Five Community Action programs have been funded in Wyoming. A Tri-County Development Corporation has been set up in Niobrara, Platte, and Goshen Counties, and a five-county group named NOWCAP is active in Hot Springs, Fremont, Park, Big Horn, and Washakie Counties. In Cheyenne a group under the Laramie County Council of Community Services has received a grant for Laramie County. The joint Shoshone and Arapahoe Business Council supervises a grant to the Indian communities with headquarters at Fort Washakie, and a central coordinating and technical assistance function is performed out of the Governor's Office in Cheyenne. This is a state-wide agency.

Perhaps the most accepted program nationwide and state-wide that has been funded by the Office of Economic Opportunity is the program called Head Start. This program, designed at a local level to help the children from socially and economically deprived families to overcome possible school difficulty by an orientation to the school at a pre-kindergarten age, has resulted in many benefits. It has been stated many times that school difficulties are often traced back to pre-school age. Many physical defects, easily correctable if detected early enough, have been discovered in a medical examination in conjunction with the program. The interest and aid to parents that may help them understand the schools and their children's role in school have been helped also by this Head Start. In 1965 seven programs were in operation and completed. These programs were in Ethete, Fort Washakie, Rawlins, Arapahoe, Cheyenne, Torrington, and Sheridan. In 1966 programs will be in operation in Torrington, Sheridan, Cheyenne, Rawlins, Worland, Riverton, Casper, and Fort Washakie.

To demonstrate new novel ideas to education or employment, projects are funded that are advanced by a community. One such project that has received much attention and nationwide publicity is the Mountain State Ranch School. This school for potential ranch foremen or ranch hands is located in the Little Laramie Valley near Centennial, Wyoming. It is hoped that superior methods of ranching can be taught in actual operating conditions to young men from the entire Rocky Mountain area.

A program of basic adult education is conducted by the State Department of Education and the State Department of Public Welfare. The program is designed to overcome the inability of certain of our citizens to read or write. It attempts to bring these people to a level of education where they can secure additional training and learn a skill or occupation. The added benefits to these individuals and to the state that the ability to read and write will bring cannot properly be evaluated. Such items as pride, self-respect, and confidence are hard items on which to place a price tag.

A work experience program that selects hard core unemployed or underemployed people from the welfare roles and places them on a job training program is carried on by the State Welfare Department with help and cooperation from the Employment Security Commission, the labor organizations, and, of course, from the various companies and industries that employ the individuals. To make producing citizens of formerly unemployed persons is a worthy goal of this program.

VISTA, Volunteers In Service to America, is a unique method of giving to deprived areas and agencies first class enthusiastic young people to help them with their problems. There were eight VISTA people in Wyoming. All of the people in this program are not young if you go by the number of years on a birth certificate, but if you judge by the ideas, the enthusiasm, and the idealism, then all could be classified as young. The VISTA people are working for the Shoshone-Arapahoe Joint Business Council and are doing social work, remedial education, home care, and many other jobs. The use of these workers, as well as other programs in O.E.O., is entirely within the jurisdiction of the community or agency within the community.

The Manpower Development and Training Act of 1962

The Manpower Development and Training Act of 1962, as amended, conducts programs in three areas--instructional, on-job training, and unallocated reserve. Cooperation among many agencies, among them the Bureau of Apprenticeship and Training, State Department of Education, and the Wyoming Employment Security Commission, is necessary for this program to be efficient and to produce the desired result in the skill training and programs instituted throughout the state.

The programs conducted under the Office of Economic Opportunity will continue to grow as more people become aware of what programs are available and what they can do to help alleviate undesirable social or economic situations in Wyoming.

Wyoming State Welfare Agency

The problems of poverty are evident in the extent of the welfare programs that are conducted in an area. Conventional programs that up to now have attempted to relieve the situation, rather than solve the problem, have resulted in ever-increasing programs both on a state and national level. Many of the problems of welfare can be traced to a lack of a skill or enough education to allow an individual to adjust to an increasingly complex society. In attacking the problem of adult education, it seemed necessary to view the problems and the programs of the State Welfare Department and to determine what help could be given to make the operation a greater success.

The programs of the Welfare Department include: Old Age Assistance, Aid to Dependent Children, Aid to Permanently and Totally Disabled, Aid to the Blind, General Welfare, General Welfare Health, Medical Assistance for the Aged, Family Commodities, and the Food Stamp Plan. In addition to the programs designed to help the poor financially, the Welfare Agency conducts an educational program designed to improve the job skills of the welfare recipients. Also the Welfare Agency conducts in-service educational programs to increase the effectiveness of its own staff.

Under Title V of the Economic Opportunity Act, a unique approach to welfare problems was attempted this year. An on-the-job training program was initiated to help upgrade welfare recipients. The educational level of these trainees generally was very low. The average grade level for trainees throughout the state during the past year was somewhere between the fourth and fifth grade. Since the educational level was so low an adult educational program was undertaken before placing the trainee in a work assignment. If a trainee could not read or follow instructions, it was felt that it would be useless to place him in a work experience assignment. Those persons who required adult basic education were given an average of approximately seven months of schooling in order to raise their educational level. Those few trainees who had completed their eighth or ninth grade, or, in some instances, required only a few additional hours to receive their High School Equivalency Certificate, were enrolled in local high school and junior college courses until they were able to take the General Educational Development examination for their high school diplomas. Approximately 75 trainees and their wives have received their diplomas during the past year. In the Cheyenne area five trainees who had exceptionally high IQ's and who had received their high school diplomas were accepted by the University of Wyoming and will be enrolled this fall as college students. Two wives who took case aide training in the local Laramie County Welfare Office have been hired by the State Department of Public Welfare as state employees, one as clerk-typist and the other as a case aide under a recent project approved by the Department of Health, Education, and Welfare.

Fifty-two trainees were released from the program during the year on a voluntary basis to accept permanent types of employment which would pay them more than they were receiving from the Work Experience and Training Program. This was approximately 31 percent of all trainees released during the year, which appears to be a very high percentage for the first year's operation. Some of those released to accept these positions in private industries took jobs which were the direct result of the training and work experience they had received while on the program. There were some who took jobs that were the result of previous skills.

It was found in the beginning of the program that, in addition to educational requirements, there was a great need for medical and remedial care both for the trainees and members of their immediate families. Medical and remedial care, which possibly should have been done in years past but for which the trainee did not have funds, was taken care of in the past year. This consisted mostly of operations and dental care which had been put off during past years and also the furnishing of glasses and general physical examinations which were given to all trainees upon entering the program. Dental care appeared to be the most needed of all types of medical and remedial care. This could possibly be attributed to the fact that most of the trainees were young persons during the early 30's and whose diets over the years had suffered. It is sincerely believed that with the medical and remedial care furnished, these persons will be placed in a far better position for securing and holding a job when they do get one. In addition to the better appearances afforded these trainees through cosmetic dentistry, the remedial care given for such things as hernia operations will permit trainees to work in a much more satisfactory physical condition. The trainee's family, in addition, was furnished almost complete medical and remedial care, and children were furnished with eye glasses in order that they could remain in school. Wives and mothers were given operations which had been needed for years.

In addition to the work experience afforded trainees, it is believed that one of the better outgrowths of the program will be the fact that trainees are being taught that they must work so many hours per day and per month. For the past several years these persons have been in an unemployed or in a needy situation, practically forgetting that in order to keep a job they are required to be at a certain place at a certain time and to remain there during normal working hours. This training in good work habits could assist these persons immensely.

The results of the program during the year showed that because of disabilities and other reasons in some households the husband was not the head of the household or the principle bread-winner of the family. Since the wife was the principle source of livelihood for the family, she was placed in training or in a work experience assignment to learn new skills in an attempt to provide more for the family in future years.

All the funds allocated during the period June 1, 1965, to May 31, 1966, by the Department of Health, Education, and Welfare were expended, which means that during the year $1,159,000.00 was placed in the economy of the State of Wyoming.

The budget for the period June 1, 1966, to May 31, 1967, is $1,499,526.00. According to the State Director of the Department of Public Welfare, approximately 500 trainees will be processed during that period. This does not mean that all trainees will be trained in an occupation, as a large percentage will leave the program after a short training period. It is estimated that approximately 10 percent will take employment in the field in which they were trained. Approximately 20 percent will leave to accept employment in a field outside their trained area.

An agreement has been reached among four of the agencies represented on the State Coordinating Committee to change the procedures for referral of clients for training. The agreement is as follows:

1. All referrals for training, whether under the Manpower Development and Training Act or under Title V of the Economic Opportunity Act originating with the Employment or Work Experience and Training local offices, will be submitted to the State Employment Service Office.

2. The Employment Service State Office is to determine whether or not there is a reasonable expectation of employment in the occupation for which training is requested.

    a. If there is a MDTA class available, the applicant will be considered for enrollment in the class. Title V will pay allowances for WE&T clients, and the Employment Security Commission will pay the allowances for MDTA clients.

    b. If the situation calls for a "less-than-class-group" training situation, the referral will be transmitted to the State Department of Education.

3. The State Department of Education will have the responsibility for locating suitable training facilities and in the case of "less-than-class-group" referrals:

    a. For Employment Service (MDTA) referrals, MDTA funds will be used to pay all costs.

    b. For Work Experience and Training Program referrals, Title V funds will be used to pay all costs.

4. In those cases where there is a need for basic education, the Department of Education will have the responsibility for making the necessary arrangements, using funds available through Title II-B of the Economic Opportunity Act or other possible sources.

5. In those cases involving on-the-job training, local personnel representing both the Employment Service and the Work Experience and Training Program will be responsible for identifying possible training facilities. Both agencies will consult with the Bureau of Apprenticeship and Training to assure adherence to appropriate training standards.

6. In all training situations, whether institutional, on-the-job training, or coupled projects, whether in class groups or less-than-class-groups, whether under the Manpower Development and Training Act or Title V of the Economic Opportunity Act or other, all agencies represented on the State Manpower and Vocational Coordinating Committee will be alert to early identification of basic education needs and will cooperate in efforts to obtain funds and facilities to meet such needs.

As of December 13, 1965, the totals for the program were as follows:

Adult Basic Education -97
Vocational -27
High School Equivalency -14

Welder - 4
Service Station Attendant - 7
Upholstery - 7
Auto Mechanic - 23
Meat Cutter - 5
Refrigeration & A/C - 1
Caseworker Aide - 4
Office Manager - 1
Warehouse Manager - 1
Machinist - 2
Body & Fender Repair - 6
Painter - 1
Recapper - 2
Clerical - 11
Commercial Artist - 1
Hotel Detective - 1
Surveyors - 5
Janitors - 29
A/C Maintenance - 2
A/C Mechanic (vocational) - 1
Draftsman (vocational) - 1
Roofer - 1
Sawyer - 1
Accounting (vocational) - 3
Agriculture - 2
Auto Parts Man - 4
Presser - 3
Library Clerk - 1
Landscaper - 1
Electricians Helper - 3
Diesel Mechanic - 1
Upholstery (vocational) - 1
Nursing Home Clerk - 1
Map Reproduction - 2
Title & Abstract Clerk - 2
Seamstress - 1
Beauty Operator (vocational) - 10
Penitentiary Guard - 1
Painter - 1
Taxidermist - 1
Appliance Repair - 2
Radio & TV Repair - 2
Civil Engineer - 1
Bookkeeper - 2
Fry Cook - 1
Farm Machinery Mechanic - 1
Motel Operator - 1
Office Machine Repair - 3
Sales - 2
Plumbers Helper - 1
Photography (vocational) - 2
Bartender - 1
Practical Nurse (vocational) - 1
Auto Mechanic (vocational) - 2
Carpenter - 1
Office Machine Operator (vocational) - 2
Newspaper Circulation - 1
Hotel Clerk - 2
Shoe Repair - 1
Auctioneering (vocational) - 1
Tinsmith - 1

This program will be in operation in 1966-67. In the end the state will have to determine if the re-education of the less fortunate pays bigger dividends socially and economically than a relief-type welfare program.

Educational Programs Designed to Meet Specific Group Needs

Several educational programs exist in the state to meet the needs of specific groups in the state. The programs designed to help the Indians and the safety programs are discussed in this section.

Indian Reservation

The inclusion of a section of the educational problems and programs of the Indian Reservation was thought necessary to show the relationship to the total educational picture of Wyoming and to indicate the responsibility of the state and communities to this section of Wyoming's people. It is not a detailed study as time and finances would not allow a study of that nature.

The Wind River Reservation is located in west central Wyoming. It is bounded approximately on the north by the Owl Creek Mountains and on the west by the Wind River Range. It extends east about six miles beyond the Big Horn River, and the south boundary runs just north of Hudson. It is a beautiful area, with many streams and rivers forming fertile valleys and rolling plains. It is in these valleys and plains, rather than the spectacular mountains, that the people live. Only one city is located on the reservation. This is Riverton with a population of approximately 7,000 people. This city is principally white, not Indian. There are several communities on the reservation. They are Fort Washakie, home of the agency headquarters, Ethete, Arapahoe, St. Stephen's and Crowheart. The principal communities near the reservation are Lander, population 4,182, to the south; Thermopolis, population 3,955, to the northeast; Shoshoni, population 765, to the east; and Dubois, population 574, to the west.

The original reservation was established by the Fort Bridger Treaty of July 2, 1863, and included parts of Colorado, Utah, Idaho, Montana, and Wyoming. The original reservation included a total of some 44,672,000 acres. A second treaty of Fort Bridger, signed July 3, 1868, formed the boundaries of the present day reservation. The present area is approximately 70 miles long (east to west) and 55 miles wide (north to south). The present reservation contains 2,268,008 acres of which approximately 1,888,000 acres are Indian owned.

The early treaties were made with the Shoshone tribe. It was not until 1878 that the Arapahoe tribe was moved to the reservation. The Shoshone, under their great chief Washakie, were always friendly to the non-Indians and helped protect them from raids by the Sioux and Cheyenne. Washakie made and kept a vow of his tribe not to shed white blood. Another Shoshone, Sacajawea, was the famous girl guide for the Lewis and Clark expedition in 1805 and 1806.

There were, as of July 1, 1965, 1,933 Shoshone and 2,590 Arapahoes. These were the people actually carried on the rolls of the tribes. In addition, there are approximately 450 non-enrolled Indians on the reservation. There are also approximately 500 non-Indians in the area. Each tribe has requirements that must be met before an Indian can be enrolled. It is on this enrollment that disbursements of money are made. Voting on tribal matters is also based on enrolled membership.

The business and economic affairs of the two tribes are not integrated in all respects. In 1940 the Arapahoe tribe organized the Arapahoe Ranch Enterprise. The income from this ranch is used for the Arapahoe tribe. It is a cooperative tribal venture operated by a hired manager. The ranch is operated as a beef production enterprise with approximately 7,000 head of cattle. The Arapahoes have participated extensively in the actual work at the ranch, and all enrolled members of the Arapahoe tribe share in the profits. Individual livestock enterprises are encouraged in both tribes by loans and assignments of base properties from which ranching operations can be carried on.

There are three types of employment available on the reservation which are agriculture only, agriculture and wages, and wages only. These three categories account for approximately 19 percent, 12 percent, and 44 percent, respectively, of all employable adults. In 1963 a survey listed 897 adults between the ages of 18 and 55. Of this group, 14 percent were engaged in agriculture, 53 percent in wage work, and 33 percent were unemployed. Only 25 percent were engaged in full-time employment. The high rate of unemployment has many reasons and explanations but among the most important are: (1) lack of skill necessary to hold and perform a job; (2) reluctance on the part of nearby towns to hire Indians; and (3) reluctance on the part of the Indians to leave the reservation.

The Wind River Reservation is one of the best watered parts of the State of Wyoming and supports large herds of Indian-owned cattle and horses. Large quantities of hay and grain are raised. Irrigation is used to produce crops because of the lack of rainfall and about 70,000 acres are irrigated. There are approximately 358,490 acres of forest land and about 1,612,327 acres of open grazing land. The timber resources have not been fully developed. Most of the ranches are small in size with 65 percent of them having 100 cattle or less.

Revenue from oil and gas is the main source of tribal income. Phosphate deposits near the reservation are now being investigated for development; while other minerals, such as coal, gypsum, bentonite, and uranium have distinct possibilities. Almost every mineral found in the State of Wyoming can be found in some quantity on the reservation. Forest resources also have recreational value not developed to the maximum at this time. Activities such as skiing, fishing, hunting, and sight-seeing tours have great potential for future development.

The Indian children attend regular public schools or the one parochial school in the area, and approximately 75 children are in attendance at government boarding schools off the reservation. Each year an increasing number seek higher learning at various colleges and universities. Within the past five years a total of $127,973 has been granted by the Business Councils to enrolled members from both tribes to assist them in the pursuit of higher learning in colleges or post-high school vocational training schools. The Arapahoe tribe grants $900 a year scholarships, and the Shoshone tribe a maximum of $750 a year scholarship to any high school student who has graduated. The Shoshone tribe also grants scholarships to deserving students who have not graduated but who wish to go to vocational training schools.

Through the cooperation of the County and State Extension Service and the Land Operations Branch of the Agency, technical assistance is offered to Indian land operators for training in conservation practices in agricultural activities.

New buildings and houses are being built. The new Shoshone Community Center at Fort Washakie is a completely modern, well-equipped building with meeting rooms, kitchen, boxing arena, and gymnasium.

In the area of adult education the signs are hopeful that many good things can be accomplished. Before 1963 few or no adult education programs were conducted, but in that year several programs were started.

The dropout rate from the public schools is very high among Indian children. It was reported that the rate is approximately twice the rate for the rest of Wyoming, and the fact that Wyoming ranked only 27th in retention of students in the United States makes this rate doubly tragic.

In the 1965-66 school year there was available to the Indians 44 college and 47 vocational scholarships or grants-in-aid. Of these only 33 of the college and 17 of the vocational grants were used. The types of post-high school courses taken were: practical nursing and nurse's aid, business education, auto mechanics, electronics, beautician training, registered nursing, barbering, and general college courses. Adult education programs conducted for or attended by Indians on the reservation were: welding, typing, shorthand, and bookkeeping.

Two examples that show some of the problems that might be alleviated by good adult education programs are given.

The frequency of police arrests on the reservation has not been studied but it is estimated that on similar reservations the rate is about five times that off the reservation. There is every reason to believe from the number of arrests for drunkenness and disturbance on and near the reservation that there is a chronic and high incident of social disorganization and family breakdown among reservation families.

The infant mortality rate on the reservation has been reduced dramatically in the past decade, but the rate is still several times the rate outside the reservation. The mortality rate of infants is not in the period of childbirth or the several days of hospitalization but in the period immediately following the return of the mother and infant to their home. This points out inadequate parental training and acceptance of responsibility by the parents, as well as other causes such as inadequate food, sanitation, housing, and living conditions.

There are several programs starting on the reservation under the Community Action Program of the Office of Economic Opportunity. A few of these may serve as an indication of what could be done in other areas. Among the programs are the Head Start Program for the very young, the Neighborhood Youth Program, the Manpower courses in sheep shearing, and carpentry under the MDTA. Many other programs such as basic adult education, foster grandparents, home care, and Upward Bound are in the planning stages.

In all programs close cooperation between the Council, the Bureau, the Adult Education Department, Community Action Program, and the University of Wyoming should be achieved. These organizations, working with the Employment Security Commission, Public Welfare, and other state agencies, can do much to return this section of Wyoming back to the main stream of the economy.

Safety Education

With the growing number of cars on the highways and a resulting increase in the number of fatal motor vehicle accidents, the nation has taken a new and more demanding look at the field of safety education. Responding to this new demand for results in Wyoming has been the Wyoming Safety Foundation, which has recently made a concentrated effort to expand its program of service to the state. However, this field is still one in which much work needs to be done, for Wyoming remains a state with no well coordinated public safety effort; no effective program in the public schools; no school bus safety program; no presently operating local or county citizens' safety council; few industrial safety programs; a minimum of safety effort conducted by local government agencies; and no state governmental official whose duties are primarily in the field of safety.

The failure of the safety effort in Wyoming is reflected in its high accident rates. Accidents are the leading cause of death in Wyoming up to age 40. The Wyoming accident rate (106.7 per 100,000 population) is the fourth highest in the nation for all accidents while the motor vehicle rate is the second highest. Motor vehicle accidents account for about 42 percent of the total accidental deaths. However, this fact should not obscure the important role of safety in the home and on the job. Accidents in the latter two locales tend to be less severe in their consequences but more frequent in their occurrence. In terms of potential benefit to the public, the prevention of accidents in Wyoming is a more important goal than the effort to control such diseases as cancer, heart disease, or polio.

Many of the omissions from what could be called a truly strong safety program are due primarily to two factors. First is the lack of any kind of a complete picture of the scope of the safety effort in Wyoming. This problem is coupled with an incomplete knowledge at the local level of new developments in the field of safety education and of safety programs that are now available. While there are many scattered agencies throughout the state who make token efforts in the safety field, no attempt has been made to evaluate any of these programs, to discover and remedy weaknesses, or to attempt any kind of coordinated effort which would result in economies of scale and greater public acceptance.

The second inhibiting factor is Wyoming's small and widely dispersed population, which makes it almost impossible to formulate effective safety programs at the local level. The normal problems of organization in small units--for example, ingrowth of ideas, inability to stimulate continuing interest, and lack of adequate resources--plague the Wyoming safety effort. Only five of Wyoming's towns and cities contain more than 10,000 population, and there are only 19 industries which employ more than 200 people. Other organizations which could and should be conducting safety education programs are frankly too small to originate and support an effective program.

Several organizations do carry on safety programs with varying degrees of effectiveness. The Wyoming Highway Patrol has been active in this field for a long period of time and could probably be termed the most effective agency in the safety field in Wyoming. The Wyoming Trucking Association carries on an active safety program for its members and has used its facilities for an information program for the general public. Active among women's groups has been the Wyoming Home Demonstration Council, and, to a lesser degree, the Wyoming Federated Womens' Clubs. The Future Farmers of America and the 4-H organization have been most active among youth groups.

Recently the Wyoming Department of Revenue has entered into a rather extensive dual program of public information and "driver improvement." An active effort to reach the public through the communications media with facts about traffic accidents has had a good response to the present from the media themselves. The driver improvement program consists of contacting drivers with poor driving records personally in order to acquaint them with the need to improve their driving skills. This program has not yet had a chance to demonstrate its effectiveness.

Formal educational agencies have not realized their full responsibility in the field of safety education. In order for the Wyoming safety effort to be fully effective, an active program must be undertaken in the public schools. Teacher preparation in this field is particularly weak in Wyoming. Courses to prepare teachers for driver education are offered only occasionally at the University of Wyoming, usually in a two-week summer course. This compares unfavorably with the two or three full-term courses in driver education offered by most universities.

The area of continuing education for adults offers many as yet unexploited avenues toward a complete safety program. Wyoming's many small firms which cannot support active safety programs within their own organizations could benefit greatly by night courses designed to teach defensive driving to fleet drivers, principles of industrial safety to supervisors and foremen, and general principles of off-the-job safety to all workers. The general public would benefit from such programs as driver improvement courses, baby sitter safety schools, first aid instruction, and home safety conferences. Such programs could be most effectively conducted with the active cooperation of the public schools. The effectiveness of such a program would depend on the extent to which the public schools provide an adult education program. There is also a need for state-wide direction and coordination. In addition, Wyoming has a vital need for an active training program for its school bus drivers who receive no training at the present time.

All of the above programs suffer from a lack of a coordinated, sustained effort. The organizations which heretofore have engaged in safety education projects all have other responsibilities and interests to which they devote most of their time. As a result of this fact, safety education has become primarily a "one-shot" type of effort. There is a definite need for organized, continuing safety programs which are coordinated and directed toward well defined goals. Such a program could probably best be conducted through the Wyoming Safety Foundation--the only organization in the state whose duties are primarily in the field of safety.

As a non-political, non-profit citizens' organization, the Wyoming Safety Foundation relies on public support for the vitality of its programs. This support has been slow to build, and the Foundation, after four years of existence, is just now capable of realizing even a portion of its projected goals. The Foundation is not designed to supplant existing safety programs nor should it attempt to do so. Rather, the Wyoming Safety Foundation could best fulfill its responsibilities by serving as a central clearing house for safety literature in the state, by acting on a consulting basis in attempts to improve and expand safety programs carried on by other agencies, and by initiating a limited number of safety education projects on its own behalf. The activities of the Foundation would be most efficient if it could employ a full-time staff and work closely with local and county-wide volunteer citizens' safety organizations. This ideal situation depends, of course, on increased public support.

The safety effort is truly educational in its nature. Few people in Wyoming recognize the real threat that accidents pose to their health and well-being as well as their economic interests. Even fewer have a real understanding of basic safety principles which they can apply in their home, on the road, and at work. It is a well-known fact that accidents are preventable. However, preventability depends on public awareness and acceptance of individual responsibility. A widespread program of public education carried on through many media is the only viable method of developing this responsibility.

A table of accidental deaths by type of accident and age for the State of Wyoming is presented (Table LI). From this table a person could draw certain conclusions about accidents. The accidental deaths are not confined to any one age group but the very young and the very old, perhaps because

TABLE LI

ACCIDENTAL DEATHS BY TYPE OF ACCIDENT, AGE, AND COST
WYOMING - 1964

Type of Accident	All Ages	0-4 Years	5-14 Years	15-24 Years	25-44 Years	45-64 Years	65 & Over	Average Yearly Costs (in millions)
Work	36	---	1	4	10	15	6	$14.3
Home	47	14	7	5	6	8	7	$ 3.4
Motor Vehicle	156	5	8	42	48	34	19	$ 5.3
Public	86	7	7	15	22	22	13	$30.8
Unknown	46	5	2	---	1	5	33	----**
Total	371	31	25	66	87	84	78	$53.8

**Cost of "unknown" class allocated to known causes.

Source: Wyoming Department of Public Health, Division of Vital Statistics, Death Records.

of their innocence in one case and their susceptibility or lack of recuperative powers in the other, are more likely to suffer. Although vehicle accidents do account for an alarming number of deaths, others that are often overlooked take an even greater toll. Poison, drowning, firearms, and falls all could be reduced or eliminated through a total public awareness of the dangers. In every case the number of near deaths, prolonged hospitalization, and mental anguish is much greater than the actual death toll. It is worth every reasonable effort to conduct educational programs designed to eliminate or reduce the accidents that are so prevalent in our complex society. No adult education program should be called complete or adequate unless some provision is made for safety courses.

CHAPTER VI

APPRAISAL AND RECOMMENDATIONS

In preceding chapters we have considered some of the educational practices and organizational aspects of post-high school education in Wyoming, as well as the societal forces that are challenging our educational system. This chapter will attempt to appraise the state's post-high school educational efforts in light of these changes with the hope of providing direction for the improvement of the state's post-high school educational system.

At times the criticisms of the educational programs and institutions may seem unduly severe without a balancing citation of the strengths in present operational practices. A long list of strengths could be compiled, but this is not the purpose of the study. The intent of this report is to suggest means of improving present programs and meeting the new challenges facing the state. Suffice it to say that Wyoming has much to be proud of in its educational system. Unlike some of her sister states in the mountain-plains area, Wyoming has not fragmented its higher educational system into a host of competing institutions and thus wasted its educational resources. The institutions of higher education, the University of Wyoming and the several community colleges, are all recognized as good educational schools. The University of Wyoming is approved by all available national accrediting agencies. It produces graduates who are acceptable both in graduate schools and various professions throughout the country. Likewise, graduates of the community colleges are well received not only in four-year institutions across the country but in various occupations.

Wyoming can well be proud of these accomplishments. However, changing conditions force us to reappraise the state's role in post-high school education and the programs designed for meeting the educational needs in this area. This is common practice and generally recognized as being the only sound basis on which institutions, educational or otherwise, can be improved. This chapter, therefore, focuses upon needed improvements for meeting the changing conditions of our society.

Unique Problems Affecting Wyoming's Educational System

Wyoming's post-high school educational system operates under a number of unique conditions which make educational decisions more difficult than in other states. Our sparse population, coupled with the great distances between small population centers, complicates the problems of offering a comprehensive post-high school educational program. High schools are similarly affected by these factors and the small high schools throughout the state are handicapped in offering comprehensive high school curricula, which would include numerous industrial arts programs. Weather conditions also aggravate the problem of providing post-high school and adult education programs because of the difficulty of travel during much of the year in the state.

The nature of the state's economy further complicates the educational decision-making process. Many of Wyoming's industries already have been seriously affected by automation and the substitution of machines for manpower. New industries have not yet moved into the state to employ the increasing number of youth that are entering the labor market. The continuing net out-migration of youth and young adults means that in many instances the educational programs must train our youth for types of work not found in the state. Under these circumstances it is difficult to determine what types of occupationally-oriented courses to offer in Wyoming schools.

Finally, along with the state's small population, Wyoming has a relatively low per capita assessed valuation. While limited tax resources are not unique to Wyoming, the fact that Wyoming has such diverse needs spread over such a large area means that the state must wisely use its tax resources if it is to meet its educational obligations to the best of its ability. If Wyoming's educational system is to meet the challenges of our changing times, the state must set priorities and wisely follow criteria which will insure that it obtain the most benefit from its tax resources. This implies development of a long-range plan to make sure resources are available when the needs arise.

Findings

I. Many Unmet Needs. Wyoming citizens have many diverse needs for post-high school and adult education programs, many of which are not presently being met. Wyoming has not yet developed a post-high school instructional program of sufficient magnitude to develop the educational potentialities of all of its society. Evidence of this is to be seen in the fact that for many of our youth there are few post-high school educational opportunities in Wyoming and that many of our youth have to leave the state in order to seek educational opportunities. Specifically, we found the state's program lacking in the following areas:

A. Technical-Vocational Education. Lack of educational opportunities are particularly noticeable in the technical-vocational areas. Relatively few programs are being offered in the field of technical and vocational education. Since Wyoming already has a system of community colleges which, in addition to the University, almost completely cover the state geographically, the state could well profit from making it financially feasible for the existing colleges to provide needed courses of a terminal, technical and/or vocational nature. The University, although it has a stated policy to offer such programs where it has special competencies, is doing relatively little to provide educational opportunities in the technical and vocational areas. With the delegation of responsibility for vocational-technical programs to the colleges, the University's role should be that of providing these colleges with competent instructors. In fact, this responsibility should not be limited to vocational work alone, but should involve the addition of an educational program for future community college personnel in all areas of instruction and administration. Unfortunately, many of our high schools, because of their small size, do not teach a full industrial arts curriculum and few are offering any vocational-oriented adult education programs. Wyoming's industries, with a few exceptions, have not yet developed in-service educational programs designed best to train their personnel for the present-day occupations. Neither industry nor the state's educational institutions has developed extensive cooperative programs for meeting this educational need.

B. Confusion About What To Teach. Although many of our educational leaders recognize the need for technical and vocational programs, there is a general confusion of what types of technical-vocational programs should be offered in our institutions. Prior to this study there have been no comprehensive manpower skill surveys made in our state. This lack of information, coupled with the rapidly changing technologies, has caused great difficulty in program planning in our educational institutions. The University of Wyoming, which has the responsibility for assisting in the development of this type of education by the training of industrial arts and vocational education teachers, has been unable to do so because of the lack of facilities necessary to meet this responsibility. The University has not produced enough well-trained personnel in any of the areas of academic, instructional, vocational, etc., to meet the community college needs of the state. It is hoped that the building of the new industrial arts facilities at the University, coupled with an increased awareness of needs in this area by University officials, will rectify this condition.

C. High School Dropouts. Another area of need concerns those persons who have less than a high school education, and, as we have seen, approximately 48 percent of the state's population 24 years old and older are in this category. Not enough is being done for these people. A high school education is a prerequisite for admission to certain programs in most of the colleges and the University, as well as to most of the apprenticeship programs. Furthermore, relatively few adult education programs are designed to rectify the deficiencies of the non-high school graduate and to assist these persons in obtaining high school diplomas or certificates of equivalency through the state General Education Development test. Similarly, there are relatively few attempts made to aid the functionally illiterate adult in Wyoming. Although some of the new federal legislation, e.g., welfare and O.E.O., are now conducting these programs, only one or two of the regular state educational institutions have been able to set up programs to assist these persons.

D. State Institutions. Another area of need in the state is found in the various state institutions such as the mental hospital, the penitentiary, the girls' and boys' reformatories, and the home for the aged. In none of these institutions are the educational programs as well developed as needed. This, in part, is due to the lack of funds and of staff members. It is also true that under the present organizational arrangements educational programs are not an integral part of the institution's avowed purpose. The fact that the state penitentiary has just increased its emphasis on an educational program with inadequate equipment demonstrates the critical needs in this area. Relatively little vocational or technical education is being offered in the Wyoming Industrial Institute and the traditional high school education predominates at this institution. Furthermore, at all of these institutions there is a critical need for in-service training for the staff, which is not being adequately provided.

E. Minorities and Handicapped Persons. In Wyoming we have several minority groups--Indian, Spanish-American, and Negro--who have unique educational needs. It was found that few of these educational needs are at present being met. Not enough programs have been established especially for the Indian, Spanish-American, and Negro, and few of these minority groups are attending the regular post-high school and adult education programs being offered in various parts of the state.

Another need in this area is for the physically handicapped persons. Gottsche Foundation in Thermopolis and the Home for Aged in Sheridan are centers where there are persons who have physical handicaps, and, therefore, have unique educational needs. The state has not provided adequate programs to meet the needs of these people.

F. College Dropouts. Another area of need in the state is for those persons who attended a university or college for a year or so but who failed to finish and, therefore, are college dropouts. Most of these people have progressed in their chosen occupations as far as they can without a degree. Many of them, because of family responsibilities, are unable to leave their employment to go back to obtain a degree. At the present time there are no programs designed specifically to assist such persons in completing their educational requirements.

Another problem related to college dropouts is the large attrition rate in our institutions. In part, this indicates a need for increased counseling services as well as diversified educational opportunities which would offer programs better suited for all students. The University at present does not offer sufficient remedial programs, nor does it have sufficient upper level programs in which students who are not interested in the normal baccalaureate programs can pursue further education. Similarly, too many of Wyoming's community colleges are concentrating on college transfer programs. There are limited educational opportunities other than college for those who are not interested in a regular baccalaureate program.

G. Graduate and Professional Needs. Another area of need in the state is for the services of more University graduates and professional persons. Wyoming, because of its sparse population and because of the relatively few opportunities for employment of professional personnel, has a difficult time in training all of the professional persons needed in the state. For instance, in the areas of library science, social welfare, clinical psychology and psychiatry, and many Ph.D. areas needed by our University, there are at present no programs available in the state. The training of adequate nurses, doctors, lawyers, and other professional persons is also needed by the state. Although the state participates in the WICHE program, there is great difficulty in educating all of the various types of professional personnel needed in the state. Obviously many of Wyoming's professional personnel will have to be educated outside of the state due to the state's sparse population.

One of the problems of operating the present WICHE program, however, is the provision requiring Wyoming students who attend an out-of-state school under the WICHE program to return to the state for five years after graduation. For many students seeking a professional education, this promise cannot be made due to the lack of professional opportunities within the state. Such a requirement seems inequitable and unreasonable. There is no such pledge on in-state students educated in the professions for which the University of Wyoming does provide facilities. Likewise, students from other states securing graduate degrees at the University of Wyoming are under no obligation to return to their native state to practice their profession. This creates a special problem for students taking their education out-of-state under the WICHE program.

Another problem pertaining to professional persons is that of providing executive training programs designed to keep practicing professionals in the state abreast of the latest developments in their fields. Increasing the number and availability of executive training programs for our professionals is another unmet need of our state.

H. Needs in Geographic Areas of State. Many communities of the state are not served at present by any adult education program. Despite the fact that the University, through the Division of Adult Education and Community Service and the Division of Agricultural Extension, offers adult education programs of various types, many areas of the state still do not have adequate adult education programs. Furthermore, most of such programs now being offered are general education courses designed to meet the needs of teachers and other college students or graduates. Too few of the existing adult education offerings meet critical needs in the vocational-technical or general courses designed for the less educated segments of our population.

II. Ineffective Organizational Arrangement. The state does not have an organizational structure capable of providing a comprehensive post-high school and adult education program. There is no single agency responsible for overall post-high school programs by studying needs and coordinating resultant action. Specifically, we found the following:

A. Limited Size of Community College Districts. Community college districts comprise only a small part of the state. The territory in each district consists of a portion of a county in three cases and an entire county in the cases of Goshen, Central and Western. Usually their tax bases are limited and their capacity to render services in a multiplicity of areas is also quite limited.

B. State Institutions. The educational programs at the state institutions (the penitentiary, mental hospital, corrective homes, etc.) are not integrated into the educational structure, and there is no provision for financing, staffing or operating the educational programs in the various state institutions.

C. Fragmentation of Responsibility. Adult education comprises a major function of the program in only a few of the public schools. The University organization for providing adult education programs is divided among three divisions--the Division of Agricultural Extension, the Division of Adult Education, and the Bureau of Business Research. Each has its own staff, and each provides its own program to its own constituents with little coordination within the University. Unfortunately, the courses in general education are required to be self-supporting.

D. Uncoordinated Federal Programs. At present there is little or no way of coordinating the federal education programs in an overall state-wide system of post-high school education. The programs under the welfare and manpower programs do not have enough coordination for meeting the diverse needs of the state.

E. Lack of Advisory Council. There is no state-wide advisory council of industry and labor to advise the state as a whole on the educational needs of the entire state. It is true that some of the various organizations and institutions do have their own advisory groups.

F. Apprenticeship Program. There appears to be a lack of state-wide planning for apprenticeship programs, although very good examples may be found in a few places in the state, particularly in the community colleges.

III. Inadequate Financial Base. Many of our post-high school programs are inadequately financed. The following observations are pertinent:

A. University of Wyoming. The University of Wyoming faces a number of financial challenges--salaries are lower than the national and regional averages, fringe benefits provided by the University are less than those provided in similar educational institutions throughout the land, and library facilities require much additional financial support. Because of continued growth in enrollments, development of a graduate program, continuation and growth of the competitive academic market, the effects of inflation, costs in the future will inevitably increase at the University.

B. Community Colleges. Each community college also faces some critical financial problems. The restricted tax base, and the inadequate amount of state assistance are the causes of financial difficulties. These have led to faculty salaries being lower than in other junior colleges throughout the land. Also, the financial problems are complicated by the fact that community colleges are expected to provide technical and vocational programs and at the same time are apparently the most difficult to finance.

Furthermore, the community college philosophy calls for low tuition in order to keep an "open door" admission for all persons. Tuitions at our institutions are higher than at comparable institutions in other states, and the tuition policies must be considered in light of the "open door" policy which we profess to maintain.

C. Adult Education. Tuition must entirely support University adult education programs sponsored by the Division of Adult Education. In many of our least populated areas it is difficult to obtain a class of a size adequate to pay for the instructional cost. This makes it impossible to provide a comprehensive program throughout the state. The lack of funds to provide these programs has led to a policy of paying the instructors of these courses at an hourly rate which is much less than they earn in their regular teaching positions. This, in turn, hinders the recruitment of staff to teach the extension courses.

Some of the University adult education and community service programs, such as those sponsored by the University's Division of Agricultural Extension or the Bureau of Business Research, are supported in part by grants from the federal government. One result of the differences in means of financing these programs is that some are offered not on the basis of need but upon the availability of funds to support them.

D. WICHE Program. Due to the impracticability of the state financing extremely expensive programs in medicine and other professional areas for relatively few students, an agreement has been entered into with other western universities whereby Wyoming students may attend out-of-state schools and have part of their expenses paid by the State of Wyoming. However, the requirement that students who attend an out-of-state institution under the WICHE program must return to the state for a five-year period of employment or practice after completion of their preparation seems inequitable to the students. A serious problem inherent in the WICHE program, however, stems from the fact that it is sometimes difficult to find suitable professional employment in the state. The fact that the students who attend the University of Wyoming for professional training do not have to sign such a statement merely enlarges this problem.

IV. Staffing Problems. The state's post-high school institutions also face serious staffing problems, as can be seen in the following observations:

A. Turnover of Staff. The financial problems of the higher education institutions are reflected in the problem of adequate staffing of our institutions. Low salaries and meager fringe benefits lead to a turnover of faculty in our educational institutions.

B. Recruiting Technical-Vocational Teachers. The state has a difficult time in obtaining competent technical-vocational teachers. The University teacher training program in this field has been inadequate and has failed to produce the professional leadership needed in this area.

Furthermore, the educational institutions have difficulty in obtaining skilled craftsmen as teachers for a number of reasons. One such reason is the problem of paying a salary capable of attracting the competent individuals from their skill. Another reason is the status problem involved in hiring a non-degree person to teach the technical-vocational programs working alongside instructors with advanced degrees.

C. Recruiting Adult Education Teachers. The state also has difficulty in obtaining sufficient numbers of adult education teachers because of the amount of traveling involved and because of the low salary available to most of these adult education positions. Too often teachers in this area must conduct the classes on an overload basis and expect a stipend only a fraction of their regular salary for corresponding work.

Recommendations

I. State Assumption of Responsibility. Providing a comprehensive post-high school education program adequate to meet the needs of all of Wyoming's citizens is a state responsibility. The State Legislature and the Governor, as the respresentatives of the people, should recognize this role, and through legislative enactments insure an adequate educational organization and adequate finance to conduct the types of educational programs needed.

II. Create a State Educational Organization. It appeared obvious to the authors of this study that Wyoming does not now have the machinery to cope with the problems that confront the people of the state in the area of post-high school education. The present Wyoming institutions of post-high school education are very good schools and each is making a unique contribution. Nevertheless, without additional leadership, systematic planning, and coordination, it is doubtful that they can properly be organized, expanded, and directed toward providing adequate educational opportunities to Wyoming's citizens in the decades ahead. This leadership should have the following responsibilities:

A. To exercise leadership and to give direction to state-wide planning for post-high school education in Wyoming.

B. To define the total role and program of all of the public post-high school institutions.

C. To establish criteria for determining the need for the creation of additional state-supported post-high school institutions.

D. To coordinate the post-high school educational programs in order to help realize the greatest investment value through inter-institutional cooperation, appropriate division of responsibilities, and consolidation of functions.

E. To assist Wyoming's higher education institutions in defining and achieving a high quality of education and to challenge them to work toward common goals.

F. To assist the public in achieving greater understanding and confidence in their loyalty towards institutions of post-high school learning.

III. Englarging Tax Base of Community College Districts. Community college tax bases at present are too small to provide adequate resources. Any creation of new institutions should be in accordance with an overall state plan for providing educational services to Wyoming's citizens.

IV. Creation of State Advisory Board. Curriculum and program planning requires greater understanding of the changing needs of industry and labor in the state and our society in general. It is therefore recommended that a state-wide advisory committee be organized. This would be composed of community leaders who would encourage labor, industry, and other civic leaders to aid in foreseeing the developing needs of the state.

V. Review of Role of Institutions. In order to provide a coordinated approach for meeting the educational needs of the state, it is recommended that the roles of each of the educational institutions be reviewed and defined. The following are recommended for the various educational institutions.

A. The University of Wyoming. The roles of the University of Wyoming need to be considered anew in light of the overall needs of the state.

1. The University should attempt to offer as wide and superior a program in the liberal arts and in the professional and graduate programs as possible.
2. It is suggested that the University of Wyoming has some special competencies for providing leadership in and for assisting in the expansion of technical and vocational programs. The responsibilities of the University in improving its counseling programs and in servicing technical and vocational programs should be reviewed.

3. The University should also provide leadership in developing teacher training programs to meet the state's needs for technical-vocational and special education teachers and in developing seminars to update the various professional workers in the state.
4. Each college within the University, if it has not already done so, should carefully review its responsibility for and the extent to which it is providing the state with an adequate number of graduates from its program.
5. The University should work more closely with the community colleges as concerns the transfer of credit from these institutions. If the colleges are to be truly state institutions, students attending them should be given exactly the same consideration on transferring to the University as students who receive their first two years' program at the University.

B. Community Colleges. The roles of the community colleges also need to be reviewed. Although the community colleges express a commitment to a broad-based educational program for all of our people (refer to State Wide Policies, issued by the Wyoming Community College Commission in 1962), programs of most of these institutions still too closely parallel the first two-year offering at the University of Wyoming.

In view of the existence of five community colleges (six colleges starting in the fall of 1967), it must be recognized that each is by the very nature of things being forced to proceed at a rate differing from that of the others in certain areas. Consequently, the following recommendations must not be interpreted to imply a lack of the recommended services. Rather it is intended to commend the extent to which the community college programs in Wyoming have been developed and by this listing serve as a rough guideline for future development in each college.

It is recommended that the community colleges:

1. Expand in the areas of technical-vocational programs. This should be done in the cooperative role in providing extension adult education.
2. Review admission policies in order to provide more educational opportunities for those persons who have not finished high school. Admission to the non-credit programs of the community colleges might be open to all adults over 18 years of age in those colleges not following this practice, whether they have completed high school or not.
3. Expand their vocational counseling and guidance programs.
4. Develop more extension programs to provide educational opportunities for their entire districts.
5. Conduct more intensive follow-up studies of their graduates and their dropouts in order to determine the effectiveness of their educational programs.
6. Create local advisory boards consisting of the industrial and labor leaders of their communities where this has not previously been done. More emphasis should be placed upon adult technical, terminal, and general education in our community colleges.

C. Public Schools. Public Schools should continue to perform an important role in providing adult education programs because of the vast distances between our post-high school institutions. The University and community colleges should assist the high schools in planning and coordinating such courses.

1. Each school district board and community should recognize the importance of adult education and thus accept the idea of educational responsibility for the entire community, not for the years of K-12 alone.
2. In the larger school districts not part of a community college district, a person who believes in vocational, technical, and adult education should be hired to serve as director of such a program. He should be given the responsibility for conducting the programs, and, equally as important, he should be given resources and time necessary to do properly the job which has been assigned to him.
3. A new concept in the method of financing adult education should be realized in the communities. The concept of self-support must be abandoned, if possible. Many classes are important to a community beyond the numbers of people engaged in them.
4. Help in starting programs, in organization of programs, in securing teachers, and in preparing adult educators is a function of the community colleges, the University, and the State Department of Education. A close cooperative effort between all concerned will result in more and better programs. Technical help and teachers are available and should

be utilized by the communities. This help is available from the Division of Adult Education and Community Service of the University of Wyoming, the various colleges of the University and the State Department of Education. Securing teachers for specialized classes can be made easier with a better working relationship between the communities and the colleges. The education of adult educators and the instilling of an understanding of this part of the educational picture in all undergraduate and graduate students should be a requirement of the College of Education, as well as a requirement for the certification of all public school teachers.

5. All communities should have available a program of adult education. In those communities with a community college, the development of this program should be a joint responsibility of the college and the school district. In those communities without a college, a person responsible for helping and coordinating programs should be employed by each school district. Closer contacts with parents, more responsibility for certain phases of adult education, and a stronger program will probably result in these communities.
6. Close cooperation between the public schools and other agencies in the community and in the area is a necessity for a good program. In the case of a company needing a program, methods of financing could be arranged between the company or industry and the school. By cooperation, the combination of the facilities and resources of such

agencies as the library, the medical profession, safety council, and many others can make a truly community adult education effort.

D. General. There are additional recommendations for development of programs by the various agencies in Wyoming. Many of these are not dependent on approval of some of the recommendations listed previously. On the other hand, some of the ways in which they would be carried out would be greatly influenced by the action taken on the more general recommendations. Following is a brief look at these agencies:

1. Indian Agency. The Division of Adult Education and Community Service of the University of Wyoming should cooperate with the educational officers of the Wind River Indian Reservation by explaining what services are available and providing those services requested by the agency.

   An effort should be made on the part of the communities of Wyoming to integrate the Indians into the work force when and where possible, using their special talents and abilities rather than making them into copies of white men.

2. Labor Organizations. Programs of updating existing skills and learning new allied skills should be expanded within the framework of labor and management organizations by community colleges, the Division of Adult Education, and all others available.

   Organized groups, such as unions and companies, should analyze very carefully the program for the older worker aimed at adjustments for retirement. A program designed for recreation is not enough. It will be necessary to educate for participation, possible on a non-paying basis, in civic affairs. Active membership in such programs as library aid, park beautification, chamber of commerce, or city promotion, to mention a few, would better allow the retired people still to participate and contribute to the community in which they live.

Money should be provided the Department of Labor and Statistics to update and improve on a year-to-year basis the projections and statistics of the Manpower Study.

3. Welfare Organizations. Cooperative seminars and classes by the University of Wyoming and the State Welfare Department to meet new skill needs and to upgrade qualifications of the personnel should be conducted.

   A closer working relationship with the resources available at the University of Wyoming and the community colleges designed to re-educate the people financed by welfare aid should be undertaken.

   Collection of educational data on welfare receipients to determine, if possible, cause and relationship of education and welfare needs, and to help plan realistic programs for the future should be an expansion of the present program of the department.

4. Libraries. The libraries of the state, through their connections with each other, could and should serve as outlets for films and other audio-visual aids. In cooperation with the audio-visual section of the University of Wyoming, films

could be made available to many organizations. Films and tapes for many types of credit and non-credit classes could be made available.

One of the reasons given for lack of programs and lack of planning for programs is that the skills required are not available on the part of the staffs of the libraries in the state. The University of Wyoming should conduct whatever training might be necessary to provide these skills.

5. Safety. Greater support of and effort on the part of the Wyoming Safety Foundation to act as a central coordinating agency for safety education in Wyoming is necessary.

All public schools, in regular classroom work and especially in adult education classes, should conduct or strengthen their safety education and practices. Information on safety practices might be greatly improved by the development of safety programs to meet the legal requirements of 60 minutes of safety education per month.

The value of this recommendation can be improved if the State Department of Education strongly recommends that teachers of secondary and elementary education take the safety course conducted by the University of Wyoming Recreation Department.

Credit and non-credit safety programs should be conducted for industry, driver improvement, baby sitting, and other areas.

6. State Department of Education. An increased effort in the area of high school equivalency education and additional testing centers would provide additional opportunities for

many adult citizens to advance to a higher educational level. This would open up expanded night school university credit classes, better job opportunities, apprenticeship programs, and perhaps even advancement in presently held jobs. Closer cooperation with other educational agencies in the state is absolutely essential for properly servicing the educational programs for all groups in Wyoming.

7. State Penitentiary. Programs developed here should result from a deliberate effort to match men, capabilities, and future opportunities.

   The program now depends upon three factors which are subject to political change. These are cooperation between the offices of the Governor, the Warden, and the State Superintendent of Public Instruction. It is recommended that some method of incorporating an educational program for the inmates of the State Penitentiary into the regulations or statutes of organization be accomplished.

   Very closely detailed follow-up on the graduates of this vocational-academic program should be made on an individual basis. Important information may be lost if such a follow-up is not properly financed and administered.

8. Boys' Industrial Institute. An expanded and experimental approach to vocational-technical education should be undertaken in addition to increased effort to encourage the boys to achieve a high school education.

   Some agency or organization in the towns and cities should undertake to help in rehabilitation, job placement and guidance for boys released from this institute. Any improvement that can be made in the satisfactory adjustment made by these boys will give both monetary and social rewards.

9. Lander Home. There are relatively few employees with any one specific educational need but rather there is a series of needs by small numbers of people, and, as the courses offered must usually be self-supporting, the opportunities for securing help in these fields are limited. A program supported by the state to offer one or two courses either at no cost to the employees or at a minimum fee to be paid by the hospital itself will greatly help to upgrade the employees.

   Increased efforts should be made by the University to offer courses of instruction to meet the needs of the institution for special education teachers, special nursing workers, and psychologists and other specialized employees.

10. Girls' Home. At this home there is apparently a need for many educational offerings. The girls are neat and alert. Their attitude towards school (once in the home) is good. The rate of completions of high school either within the home or on their release is good. It is not so much a question of what can be done at the home at the present time but a question of what can be done when the girls are released. There is little supervision, little time to get readjusted, and almost no positive response from the

communities. At the time of release, when all it takes is one shove in the wrong direction, the schools are reluctant to accept these girls fully, the law enforcement looks on them as potential troublemakers, and the community, for the most part, rejects them.

Wyoming is in need of a series of halfway homes or adjustment centers properly staffed and properly located. These adjustment centers will allow the boys from the school in Worland, the girls from the school in Sheridan, and the youngsters from the care home in Evanston, to gain confidence in their ability to fit back into the life in which they once failed. To spend all the time, money, and effort on the different homes and then to negate the effort by fumbling the last phase seems inconsistent with the effort and thought that has been expended on our institutions.

The question of follow-up or out-patient supervision and guidance seems to be a real need in all of the institutions.

11. State Hospital. A state-wide cooperative program should be designed to help the geriatrics program which could do a better job of providing for all of these people and alleviate the problem of unnecessary crowding in the hospital.

A follow-up and out-patient care plan to achieve the results possible from the work at the hospital should be started wherever it is not now in effect.

Subsidized advanced classes for the employees of the institution under the present adult education program would help both employees and the hospital.

Specialized workshops or classes for the employees on a regular scheduled basis as determined by the staff could be started at the present time.

VI. Financing Post-High School Education. Wyoming is expected by its citizens to perform a much larger role in post-high school education. These needs are apparent and programs should be started immediately or situations will gradually get worse. The state is called upon to provide education of a continually improving quality to a far larger number of students. In addition, our educational institutions are called upon to assume new roles in providing a continuous education throughout life. Meeting these new demands obviously is going to cost more. It is, therefore, imperative that the investments in post-high school education be spent in such a way that we receive the greatest return possible for our investment. The following recommendations, therefore, are made to meet these challenges:

A. The salaries of the University and community colleges' faculties must be made competitive if the state is to hold the qualified staffs that they presently have. Particularly glaring is the problem of providing an income for retirement. The state's retirement system must be improved in the near future or the present problem of holding qualified personnel will be greatly magnified.

B. The methods of financing the community colleges should be reappraised. Wyoming's present formula for the distribution of state aid for the operation of community colleges no longer serves the best interests of the people. An analysis of the financial requirements of Wyoming's present community colleges indicates that a more effective and equitable formula for state aid is needed.

It is recommended that the state's share of the cost of operating community colleges be increased substantially in recognition of the fact that providing a post-high school education is basically a state responsibility. Particularly, the state should encourage the community colleges to undertake technical and vocational programs by providing additional funds to those institutions developing programs in these areas.

It is recommended that the state share capital costs for community college building. The Community College Commission should, at its discretion, develop a capital needs budget for all of the colleges in the state and make recommendations to the Legislature for financing needed capital improvements.

C. Tuition policies at the various institutions should be continually studied from the view of not only providing revenues for the institutions, but to insure that the tuition policies do not prevent persons from benefiting from needed educational opportunities. Scholarship programs should be established by the state for providing tuition to guarantee that the appropriate education is available to all persons who need it and otherwise could not attempt educational activities.

Final Statement

This study emphasizes the rapid changes occurring in our society and the effects on our society. Our state faces and will continue to face serious decisions as a result of these changes, and our educational system must adjust to new needs. Plans, like road maps, only point out the paths open to accomplish the journey or venture. Continuous updating of studies such as this must be made in order to adapt our educational systems to meet these new changes adequately and to plan for the future. To a large degree, the welfare of our state depends upon how well our educational system meets these challenges.

APPENDIX

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The following appendix was reproduced from the article by Gandi R. Rajender which appeared in the March-June, 1966, issue of Wyoming Trade Winds, published by the Division of Business and Economic Research, College of Commerce and Industry, University of Wyoming.

APPENDIX A

POPULATION ESTIMATES OF WYOMING COUNTIES[1]
April 1, 1965

by
Gandi R. Rajender

During the past two decades there has been a growing interest in the study of population problems. The ever-increasing gap between scarce resources and unlimited wants; the complexities of our national problems and international involvements; and the new frontiers exposed by the scientific and social revolutions of the space age, all have necessitated a careful and continuing inventory of human numbers--not only at the international level, but also at national and local levels.

The United States Bureau of Census publishes exhaustive population data every ten years which contain details of the general and special characteristics of the population on a national, state, and local basis. The latest such census was for the year 1960. The major drawback to this type of periodic census is that the interval between enumerations is much too long. For a steadily growing population and a rapidly changing economy, it becomes imperative to have interim estimates of the population for intelligent planning and decision making.

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[1] The data for this article have been obtained from various state, local, and federal government agencies. The Division would like to express its appreciation to all those who cooperated so willingly in the compilation of material necessary for completion of the population estimates. Appreciation is also extended to Professors I. J. Pikl and Edwin G. Flittie, and to Miss Rebecca J. Kinports for helpful comments on earlier drafts of this paper. The author remains solely responsible, however, for its content.

The ideal intervals at which periodic estimates should be made must depend not only upon the need for data, but also upon the availability of facilities for collecting them. From this standpoint, it would be best to have a constant flow of information which could be fed into computers to obtain population statistics on a continuous basis somewhat in the manner of a football or basketball scoreboard. This ideal situation, of course, is out of the question at present with the very limited resources which are available. A yearly estimate of population by county and by major city might be thought of as a useful compromise, but few states have either the funds or the organizational structure for preparing such estimates. Wyoming is particularly lacking in this regard. However, in view of the importance of these estimates, the Division of Business and Economic Research has attempted to publish population estimates as often as its funds and facilities have permitted. This paper contains some particularized estimates of the population growth of Wyoming, both at the state and county levels, for the period from April 1, 1960 to April 1, 1965.

In estimating the growth and resultant size of the population of any area, two major factors must be taken into consideration: (1) natural increase and (2) migration. Natural increase is the difference between the number of births and the number of deaths. Such a measure is influenced considerably by the migration factor, since an influx of newcomers may increase the population and this increase, in turn, may affect the number of marriages and the birth rate.

Estimating natural increase does not present any major problem, since fairly accurate data are available for births and deaths in the vital statistics reports of the State Department of Public Health. In some states corrections may be required for lack of completeness in birth registration, though this deficiency is becoming a much less important problem in recent years. Fortunately, in the case of Wyoming, most of the births take place in hospitals, and a careful analysis of birth statistics shows that the percentage of completeness of birth registration is so high (approximately 99.8 percent) that estimation errors are minor in nature and can be ignored.

Any analysis of migration, however, presents some difficult problems. Because of such factors as the changing pattern of economic opportunity and the growing defense needs of the country, there is a continuous varying in-and-out movement of civilian and military personnel in any particular area. Thus, it is generally conceded that population tends to shift from areas of low economic opportunity to those where such opportunities are more favorable and from areas of military passivity to those of accelerated military activity. There are, of course, other factors which tend to motivate migration, such as the desire for open space, the spirit of adventure, the need for recreation, the urge to indulge in sports and games, and the requirement of a healthy climate. But the main factor that determines migration is apparently the pursuit of the mercurial and elusive dollar.

Migration statistics would present no problem if a careful account were kept of the movement of people from community to community, as is done in Sweden.[2] But the cost of such meticulous collection of data is, at present, too prohibitive for any major country. The method generally adopted by countries, regions, and even states is to estimate the migration rate on the basis of some "symptomatic" factor which is known to be indicative of migration trends and for which information is readily

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[2] Thompson, Warren S., Population Problems, McGraw-Hill Book Company, Inc., New York, 1942, page 393.

available. Data on telephone connections, water meters, and similar public utility data are sometimes used. In the present study, the migration statistics of children of elementary school-age are used in the estimation process. This segment of the population has been chosen because reasonably accurate figures are available for it and the changes reflected closely parallel the general movements of the population in the other age groups.

Basically, the method of estimation used in this study follows a procedure adopted by the Bureau of Census in estimating current population of the subdivision of the United States[3], although some modification must necessarily be introduced to reflect local conditions. The method involves: (1) adding to the 1960 census estimate of the civilian population an estimate of births for the period from April 1, 1960 to the date of estimation, which in the present instance is April 1, 1965; (2) subtracting an estimate of civilian deaths for the same time period; (3) adding or subtracting, as the case may be, an estimate of the net civilian migration; (4) subtracting or adding, where relevant, an estimate of the net movement of civilians into the Armed Forces; and finally (5) adding an estimate, wherever necessary, of the number of persons in the Armed Forces stationed in the area on the estimate date. In some sections of the estimation process, actual figures are available due to the excellent cooperation of state and federal authorities. In other parts, estimates are based on secondary factors for which reliable figures can be obtained.

On April 1, 1965, the total population residing in Wyoming, including members of the Armed Forces, was estimated to be approximately 338,570 persons. This estimate represents an increase of 2.6 percent over the census figure of 330,066 for April 1, 1960. This rate of growth is slow in comparison with the national increase of 7.8 percent for the same period.[4]

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[3] United States Bureau of Census, Current Population Reports, Series P-25, No. 133, March 16, 1956, page 1.

In terms of population density, there has hardly been any improvement, as can be seen from the fact that in 1960 Wyoming had 3.4 persons per square mile of land area, while over the span of five years this figure rose only very slight to 3.5 persons. By contrast, in 1960 the United States had 50.5 persons per square mile; and in 1965 this figure rose to 54.6 persons. Wyoming has fallen to next to the last among the states in population totals within this short period of time; though, it continues to stand ninth in rank in regard to land area.

The county population densities and changes therein are shown in Table I. The data are based on the Census of Population of 1960 and the population estimates for 1965 (presented in detail in Table VII). Albany and Laramie Counties, surprisingly, are the only areas that exhibited any appreciable increases in density. The growing University enrollment was clearly responsible for the increase in Albany County. In the case of Laramie County, it must be presumed that the growth of Francis E. Warren Air Force Base and related missile activity contributed to the increase. Campbell, Fremont, and Teton Counties showed some slight increase. Nine counties registered no change at all and six counties registered a decrease in density. In 1965 there were at least nine counties in the State with a density of less than two persons per square mile and Sublette County had less than one person per square mile vying in lack of human habitation with such areas as Alaska.

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[4] United States Bureau of Census, Population Estimates, Series P-25, No. 313, July 16, 1965, page 2.

TABLE I

Population Density of Wyoming Counties 1960 and 1965

County	Land Area in Square Miles	Population 1960	Population 1965	Density Per Square Mile 1960	Density Per Square Mile 1965	Change in Density
Albany	4,248	21,290	24,470	5.0	5.8	+0.8
Big Horn	3,177	11,898	11,620	3.7	3.7	nil
Campbell	4,755	5,861	7,140	1.2	1.5	+0.3
Carbon	7,905	14,937	14,090	1.9	1.8	-0.1
Converse	4,282	6,366	6,160	1.5	1.4	-0.1
Crook	2,882	4,691	5,020	1.6	1.7	+0.1
Fremont	9,196	26,168	28,860	2.8	3.1	+0.3
Goshen	2,228	11,941	11,610	5.4	5.2	-0.2
Hot Springs	2,022	6,365	6,390	3.1	3.1	nil
Johnson	4,175	5,475	5,510	1.3	1.3	nil
Laramie	2,703	60,149	63,570	22.3	23.5	+1.2
Lincoln	4,098	9,018	9,260	2.2	2.3	+0.1
Natrona	5,342	49,623	49,900	9.3	9.3	nil
Niobrara	2,614	3,750	3,720	1.4	1.4	nil
Park	5,209	16,874	16,770	3.2	3.2	nil
Platte	2,086	7,195	7,220	3.5	3.5	nil
Sheridan	2,532	18,989	18,740	7.5	7.4	-0.1
Sublette	4,851	3,778	4,410	0.8	0.9	+0.1
Sweetwater	10,473	17,920	17,710	1.7	1.7	nil
Teton	2,805	3,062	3,900	1.1	1.4	+0.3
Uinta	2,086	7,484	7,400	3.6	3.6	nil
Washakie	2,262	8,883	7,650	3.9	3.4	-0.5
Weston	2,407	7,929	6,990	3.3	2.9	-0.4
STATE	97,281	330,066[1]	338,570[1]	3.4	3.5	+0.1

[1] Includes the population of Yellowstone National Park.

Source: Density figures are based on population estimates by the author.

There are two main reasons for the meager growth in population in Wyoming during the 1960-65 period. The first reason is attributable to the gradual decrease in the birth rate, at the same time that the death rate remained fairly constant, so that the rate of natural increase is exceptionally low. The second (and perhaps more important) reason appears to be the large out-migration from most of the counties of the State.

The birth rate for Wyoming has been on a steady downward trend since 1960. This decline is not unique to Wyoming, since the birth rate for the Mountain States and even for the nation as a whole has been declining. What is significant about Wyoming is the fact that the drop in the birth rate has been much more pronounced than for either the Mountain States or for the nation, leading to a decline in the rate of natural increase. Table II shows the number of live births and the birth rate for Wyoming, the Mountain States, and the United States for the period from 1960 to 1964. The birth rate per thousand population dropped by 4.7 units during this period in Wyoming, while the decline in the Mountain States was only 4.3 units, and the drop for the United States was a mere 3.3 units. Out-migration of the most productive elements of the population, as we shall see, may provide a partial explanation of this trend.

Table III shows the birth rate for the counties of Wyoming for the years 1960 and 1965. When dealing with very small populations, as we have in most of these counties, comparisons should be viewed with a certain amount of restraint and caution, since relative differences are often exaggerated. Nevertheless, the fact that all of the counties, without exception, recorded a fall in birth rate clearly demonstrates why there was a general decrease in the birth rate.

TABLE II

Live Births and Birth Rate
Wyoming, Mountain States and the United States
1960-1964[4]

(per thousand population)

Region	Number of Live Births					Rate Per 1000					Drop in Rate During 1960-1964
	1960	1961	1962	1963	1964	1960	1961	1962	1963	1964	
Wyoming	8,512	8,476	7,830	7,428	7,237	25.8	23.9	21.5	22.2	21.1	4.7
Mountain States	187,062	191,326	188,501	180,908	175,927	27.3	26.2	25.0	23.7	22.9	4.4
United States	4,257,850	4,268,326	4,167,000	4,081,000	4,054,000	23.7	23.3	22.4	21.2	21.2	3.5

[4] United States Department of Health, Education, and Welfare, Monthly Vital Statistics Report, Annual Summaries for 1961 to 1964.

TABLE III

Birth Rate for Wyoming Counties 1960 and 1965

(per thousand population)

County	Number of Births 1960	Number of Births April 1, 1964 to April 1, 1965	Birth Rate Per 1000 1960	Birth Rate Per 1000 1965	Difference Between 1960 and 1965 Rates
Albany	581	555	27.3	22.7	-4.6
Big Horn	266	204	22.4	17.6	-4.8
Campbell	154	157	26.3	22.0	-4.3
Carbon	353	285	23.6	20.2	-3.4
Converse	154	109	24.2	17.7	-6.5
Crook	123	102	26.2	20.3	-5.9
Fremont	746	618	28.5	21.4	-7.1
Goshen	291	198	24.4	17.1	-7.3
Hot Springs	135	87	21.2	13.6	-7.6
Johnson	127	85	23.2	15.4	-7.8
Laramie	1,733	1,623	28.8	25.5	-3.3
Lincoln	250	188	27.7	20.3	-7.4
Natrona	1,301	1,021	26.2	20.5	-5.7
Niobrara	87	64	23.2	17.2	-6.0
Park	397	345	23.5	20.6	-2.9
Platte	162	127	22.5	17.7	-4.8
Sheridan	368	290	19.4	15.5	-3.9
Sublette	119	86	31.5	19.5	-12.0
Sweetwater	429	404	23.9	22.8	-1.1
Teton	103	100	33.6	25.6	-8.0
Uinta	181	121	24.2	16.4	-7.8
Washakie	209	174	23.5	22.7	-0.8
Weston	223	146	28.1	20.9	-7.2
Yellowstone National Park	7				
STATE	8,499	7,024	25.8	20.8	-5.0

Source: Wyoming Department of Public Health, Biennial Vital Statistics Reports, 1961-1965.

The mortality rate for Wyoming generally remained constant during the period 1960-1965, staying in the region of 8.4 deaths per thousand as against the United States rate of 9.5 per thousand. This factor has, therefore, not been of any major significance in influencing the rate of population growth. The State of Wyoming, however, had the third highest mortality rate in the Mountain States region, with Montana leading with a rate of 9.7 deaths per thousand and followed by Nevada with 8.4 per thousand. Table IV shows the number of deaths and the death rate per thousand for Wyoming, the Mountain States, and the United States for the period from 1960 to 1964.

A comparison of death rates for individual counties for the years 1960 and 1965, as shown in Table V, does not indicate any large changes for particular counties. The change varied from a drop of 2.2 per thousand in Crook County to an increase of 2.3 per thousand in Goshen County.

The most striking, and perhaps disheartening, feature about the population trend in Wyoming is that for years more people have been leaving the State than have been coming in. This preponderance of out-migration, which was already clearly noticeable in the 1960 census, has recently shown a tendency to increase. Between the years 1950 and 1960, the number of out-migrants of all ages was 19,671. The out-migration rate for the ten-year period was 5.6 percent or .56 percent (non-compounded) annually.[6] For the five-year period from April 1, 1960 to March 31, 1965, the estimated number of people leaving the State was 18,534, and the rate of outflow was 5.6 percent or 1.1 percent every year. This rate would seem to indicate that out-migration alarmingly doubled, during the five-year period, over the previous decade.

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[6] Bowles, Gladys K., and Tarver, James D., Net Migration of the Population, 1950-60 by Age, Sex, and Color, Economic Research Service, United States Department of Agriculture, 1965, Vol. I, Part 6, page 953.

TABLE IV

Deaths and Death Rate
Wyoming, Mountain States and the United States
1960-1964[5]

(per thousand population)

Region	Number of Deaths					Rate Per 1000				
	1960	1961	1962	1963	1964	1960	1961	1962	1963	1964
Wyoming	2,796	2,641	2,729	2,832	2,844	8.5	7.4	7.5	8.4	8.3
Mountain States	55,349	56,676	58,461	59,765	61,390	8.1	7.8	7.8	7.8	8.0
United States	1,711,982	1,702,000	1,757,000	1,813,000	1,801,100	9.5	9.3	9.5	9.6	9.4

[5] United States Department of Health, Education, and Welfare, Monthly Vital Statistics Report, Annual Summaries for 1961 to 1964.

TABLE V

Death Rate for Wyoming Counties 1960 and 1965

(per thousand population)

County	Number of Deaths 1960	Deaths April 1, 1964 to April 1, 1965	Death Rate Per 1000 1960	Death Rate Per 1000 1965	Difference Between 1960 & 1965 Rates
Albany	171	150	8.0	6.1	-1.9
Big Horn	127	115	10.7	9.9	-0.8
Campbell	44	53	7.5	7.4	-0.1
Carbon	114	122	7.6	8.7	+1.1
Converse	53	44	8.3	7.1	-1.2
Crook	48	40	10.2	8.0	-2.2
Fremont	228	207	8.7	7.2	-1.5
Goshen	104	128	8.7	11.0	+2.3
Hot Springs	69	81	10.8	12.7	+1.9
Johnson	55	66	10.1	12.0	+1.9
Laramie	422	452	7.0	7.1	+0.1
Lincoln	82	68	9.1	7.3	-1.8
Natrona	357	372	7.2	7.5	+0.3
Niobrara	45	46	12.0	12.4	+0.4
Park	118	139	7.0	8.3	+1.3
Platte	87	87	12.1	12.1	-0.0
Sheridan	230	236	12.1	12.6	+0.5
Sublette	31	31	8.2	7.0	-1.2
Sweetwater	185	177	10.3	10.0	-0.3
Teton	29	30	9.5	7.7	-1.8
Uinta	72	67	9.6	9.1	-0.5
Washakie	59	53	6.6	6.9	+0.3
Weston	61	54	7.7	7.7	-0.0
STATE	2,792	2,805	8.5	8.3	-0.2

Source: Wyoming Department of Public Health, Biennial Vital Statistics Reports, 1961-1965.

The net migration and migration rate by age and sex for the period from 1950-1960 are shown in Table VI. These data show that except for those groups consisting of children under four years of age and women of the age groups 25 to 34 and over 75, there was a steady out-migration of men and women in all other age groups. Apparently, one of the important export commodities of Wyoming has continued to be its people.

The effect of out-migration was most conspicuous in the 15-24 age groups where the rate ranged between 9.7 and 10.9 percent. Most of the individuals in these groups appear to be those seeking economic opportunity for the first time; and because of the very slow industrialization and urbanization of the State presumably were compelled to leave the State in search of job opportunities which were more plentiful elsewhere. Some in the groups, of course, left to continue their education on out-of-state college campuses. These groups represent a sizeable segment in a few portions of the State, particularly in the northern, extreme eastern, and southern areas of Wyoming.

Another segment of the population with a high rate of out-migration was that which involved those in the 65-69 age group. Apparently many people left the State soon after retirement, perhaps in search of a more salubrious climate. Other changes in living conditions may have been important; thus, many may have had the desire to spend their old age close to their children who had already taken up their residence outside the State. Many other conditions of this kind may be hypothesized.

There was a certain amount of in-migration among women of the age group 25-34, perhaps mainly because of the "service" type of job opportunities available at the University of Wyoming in Laramie and in the relatively large cities of Casper and Cheyenne. A few, ostensibly, may

TABLE VI

Net Migration and Migration Rate in Wyoming
1950-1960

(by age and sex)

				Migration Rate Percent		
Age 1960	Total	Total Male	Total Female	Total	Male	Female
All ages	-19,671	-13,193	-6,478	-5.6	-7.2	-3.9
0-4	570	20	550	1.4	0.1	2.8
5-9	- 1,808	- 1,107	- 701	-4.6	-5.4	-3.6
10-14	- 2,022	- 898	-1,124	-5.8	-5.0	-6.6
15-19	- 2,654	- 1,404	-1,250	-9.7	-10.1	-9.3
20-24	- 2,397	- 1,527	- 870	-10.9	-13.8	-8.0
25-29	- 1,358	- 1,790	432	-6.1	-14.6	4.3
30-34	- 1,513	- 1,644	131	-6.2	-12.3	1.2
35-39	- 1,517	- 916	- 601	-6.3	-7.4	-5.1
40-44	- 1,675	- 866	- 809	-7.5	-7.5	-7.4
45-49	- 1,122	- 753	- 369	-5.5	-7.0	-3.8
50-54	- 915	- 468	- 447	-5.2	-5.0	-5.5
55-59	- 974	- 563	- 411	-6.7	-7.3	-6.0
60-64	- 735	- 244	- 491	-5.9	-3.7	-8.2
65-69	- 1,040	- 619	- 421	-9.4	-10.4	-8.2
70-74	- 548	- 326	- 222	-6.7	-7.5	-5.9
75+	12	- 102	114	0.1	-2.4	2.8

Source: Economic Research Service, United States Department of Agriculture, Population-Migration Report, May 1965, Vol. I, Part 6, page 953.

be seeking husbands in a state in which the male-female ratio is exceptionally high despite the fact that the out-migration of males is much higher than that of females.

Table VII presents population estimates for the counties of Wyoming. The rate of natural increase, or the difference between births and deaths, and the net migration rate are both based on the population for 1960. A negative sign indicates an out-migration or decrease.

During the five-year period from 1960 to 1965, only thirteen of the twenty-three counties of Wyoming gained in population. As previously noted, the largest gain in terms of absolute numbers was in Laramie County, which occurred primarily because of the influx of Air Force personnel at Francis E. Warren Air Force Base. Albany County showed the next highest numerical increase. In the case of this County, the gain was due to increasing enrollment at the University of Wyoming. Thus, in both cases, the net increase may be considered "artificial" in the sense that they were not due to any definite trends of in-migration for the usual economic reasons. The only counties which seem to have attracted people from the point-of-view of economic opportunity were Campbell, Fremont, Sublette, and Teton Counties. Crook, Natrona, and Lincoln Counties showed small gains, but since each of these counties registered an out-migration, such gains must be attributed to natural increase. The small increases in Hot Springs, Johnson, and Platte Counties were not significant and hence, invite little comment.

The counties which showed the greatest loss were Washakie and Weston, both registering decreases of well over a tenth of their 1960 population figures. Carbon, Converse, and Big Horn Counties also suffered losses of a moderate nature. Though the population losses were very

TABLE VII

Population Data for the Counties of Wyoming
April 1, 1960 to April 1, 1965

County	Population 4/1/60	Births 4/1/60 to 3/31/65	Deaths 4/1/60 to 3/31/65	Natural Increase	Percent Natural Increase	Net Civilian Migration	Percent Net Migration	Actual Increase	Percent Actual Increase	Population 4/1/65
Albany	21,290	2,789	778	2,011	9.4	-1,406	-6.6	3,181	14.9	24,470
Big Horn	11,898	1,204	585	619	5.2	-724	-6.1	-276	-2.3	11,620
Campbell	5,861	868	256	612	10.4	711	12.1	1,282	21.9	7,140
Carbon	14,937	1,580	645	935	6.3	-1,671	-11.2	-845	-5.7	14,090
Converse	6,366	683	309	374	5.9	-496	-7.8	-210	-3.3	6,160
Crook	4,691	583	205	378	8.1	-18	-0.4	327	7.0	5,020
Fremont	26,168	3,657	1,108	2,549	9.7	417	1.6	2,688	10.3	28,860
Goshen	11,941	1,191	581	610	5.1	-790	-6.6	-330	-2.8	11,610
Hot Springs	6,365	550	353	197	3.1	-103	-1.6	24	0.4	6,390
Johnson	5,475	538	278	260	4.7	-172	-3.1	34	0.6	5,510
Laramie	60,149	8,425	2,130	6,295	10.5	-4,362	-7.3	3,416	5.7	63,570
Lincoln	9,018	1,161	387	774	8.6	-445	-4.9	237	2.6	9,260
Natrona	49,623	5,735	1,754	3,981	8.0	-3,320	-6.7	279	0.6	49,900
Niobrara	3,750	370	213	157	4.2	-152	-4.1	-26	-0.7	3,720
Park	16,874	1,927	644	1,283	7.6	-1,201	-7.1	-106	-0.6	16,770
Platte	7,195	701	393	308	4.3	-169	-2.3	28	0.4	7,220
Sheridan	18,989	1,600	1,153	447	2.4	-428	-2.3	-236	-1.2	18,740
Sublette	3,778	513	140	373	9.9	281	7.4	631	16.7	4,410
Sweetwater	17,920	2,088	855	1,233	6.9	-1,251	-7.0	-208	-1.2	17,710
Teton	3,062	439	133	306	10.0	573	18.7	840	27.4	3,900
Uinta	7,484	754	330	424	5.7	-437	-5.8	-82	-1.1	7,400
Washakie	8,883	1,007	292	715	8.0	-1,856	-20.9	-1,229	-13.8	7,650
Weston	7,929	928	278	650	8.2	-1,515	-19.1	-942	-11.9	6,990
Yellowstone National Park	420	40	3	37	8.8	------	-----	37	8.8	457
STATE	330,066	39,331	13,803	25,528	7.7	-18,534	-5.6	8,514	2.6	338,570

Source: Estimation by author.

small in Niobrara, Park, Sheridan, Sweetwater, and Uinta Counties, the fact remains that the impact of these losses helped to retard the population growth of the State.

An important aspect of these estimates is the fact that the counties having the three largest cities in the State also showed large numbers of out-migrants. This observation suggests that the industrial growth in these counties has been either tardy or has not been sufficient to support the movement toward urbanized areas. The long-run portent, however, remains to be seen.

Since school enrollment is an important element of population estimates, it is of interest to examine the trends in school enrollment in each county for the five-year period under consideration. These data are shown in Table VIII. The percentage of actual increase in the population is once again given here to facilitate comparison between the two rates of growth. The most striking feature of these data is that the rate of increase in school enrollment for the State as a whole (2.1 percent) was reasonably clase to the rate of increase of the population, or 2.6 percent. The rate of growth in school enrollment for the ten-year period from 1950 to 1960 was 35 percent, or a non-compounded average of 3.5 percent annually[7] in contrast to a growth of 2.1 percent or .4 percent annually for the five-year period from 1960 to 1965. Thus, school enrollment grew less rapidly than the rate of total population growth. Thirteen of the twenty-three counties, excluding Yellowstone National Park, showed decreases in school enrollment in the 1960-1965 period. Big Horn and Hot Springs Counties registered declines of over 10 percent; Carbon,

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[7] United States Bureau of Census, Statistical Abstract of the United States, 1965, (86th Edition) Washington, D. C., 1965, Table No. 161, page 121.

TABLE VIII

Wyoming Public School Enrollments
1960-1961 to 1964-1965

County	1960-1961	1961-1962	1962-1963	1963-1964	1964-1965	Differences Between 1960-1961 and 1964-1965	Percentage Change In School Enrollment	Percentage Actual Increase in Population
Albany	4,017	4,081	4,445	4,436	4,175	158	3.9	14.9
Big Horn	3,694	3,575	3,416	3,505	3,250	-444	-12.0	- 2.3
Campbell	1,390	1,478	1,680	1,770	1,854	464	33.4	21.9
Carbon	3,801	3,774	3,782	3,948	3,595	-206	- 5.4	- 5.7
Converse	1,682	1,696	1,694	1,792	1,670	- 12	- 0.7	- 3.3
Crook	1,290	1,520	1,556	1,585	1,413	123	9.5	7.0
Fremont	7,101	7,869	8,012	8,033	7,652	551	7.8	10.3
Goshen	3,087	3,092	3,179	3,162	2,965	-122	- 4.0	- 2.8
Hot Springs	1,793	1,739	1,684	1,825	1,570	-223	-12.4	0.4
Johnson	1,404	1,435	1,373	1,396	1,367	37	- 2.6	0.6
Laramie	15,084	15,263	14,051	17,740	16,304	1,220	8.1	5.7
Lincoln	3,069	3,146	3,350	3,158	2,873	-196	- 6.4	2.6
Natrona	13,866	13,887	13,946	14,944	14,540	674	4.9	0.6
Niobrara	825	816	820	870	859	- 34	- 4.1	- 0.7
Park	4,775	5,044	4,895	4,948	4,710	- 65	- 1.4	- 0.6
Platte	1,968	1,887	1,844	1,898	1,840	-128	- 6.5	0.4
Sheridan	4,283	4,432	4,453	4,502	4,309	26	0.6	- 1.2
Sublette	1,014	1,034	1,022	1,063	1,085	71	7.0	16.7
Sweetwater	4,597	4,647	4,720	4,611	4,406	-191	- 4.2	- 1.2
Teton	789	859	995	1,008	1,053	264	33.5	27.4
Uinta	1,902	1,902	1,974	1,938	1,872	- 30	- 1.6	- 1.1
Washakie	2,251	2,146	2,317	2,287	2,064	-187	- 8.3	-13.8
Weston	2,075	1,968	2,163	2,197	2,125	50	2.4	-11.9
STATE	85,757	87,290	87,371	92,616	87,551	1,794	2.1	2.6

Source: The Wyoming State Department of Education, Biennial Reports of Education in Wyoming 1958-1960, 1960-1962, and 1962-1964 and letter from State Superintendent of Public Instruction for 1964-1965 data.

Goshen, Lincoln, Niobrara, Platte, Sweetwater, and Washakie Counties suffered moderate losses ranging between 4 to 8 percent. One fact that deserves notice is that enrollment showed a decided downward trend since 1964 in all but three counties. For the school year 1963-64, the total public school enrollment for the State was 92,616. In 1964-1965 it was 87,551, and the latest figure for the current academic year is 86,308.[8] One plausible hypothesis for this decline could be that young parents with school-age children have been leaving the State at an accelerated rate in search of better economic opportunities.

One other indicator of population trends is that of employment. It is appropriate to take into consideration only occupations covered by unemployment compensation, since these are the segments of the labor force most likely to migrate. Table IX presents the "covered" employment data for the State and for the counties for the period from 1960 to 1964. Here again, we see that there was retrogression. Employment clearly declined in sixteen counties. In terms of absolute numbers, Laramie and Natrona Counties led the others in the extent of decline. The percentage decrease was highest in Niobrara County with an 18 percent reduction. Carbon, Johnson, and Washakie Counties also showed losses of over 10 percent. For the State as a whole, "covered" employment declined 4.3 percent during the 1960-1964 period.

One reason for this reduction in the labor force is that employment has been generally declining in the three sectors of mining, construction, and manufacturing. In the case of Laramie County, the completion of the missile complex and its eventual closing down might have contributed to

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[8] The Wyoming State Department of Education, Division of Research and Statistics Service, A Report on Pupil Enrollment, Fall 1965-1966.

TABLE IX

Covered Employment Data for Wyoming Counties
1960-1964

County	1960	1961	1962	1963	1964	Difference Between 1960 & 1964 Figures	Percent Increase or Decrease
Albany	4,641	4,456	4,453	4,270	4,480	-161	-3.5
Big Horn	1,711	1,688	1,760	1,640	1,690	- 21	-1.2
Campbell	859	1,075	1,154	1,400	1,430	571	66.5
Carbon	3,992	3,741	3,630	3,590	3,480	-512	-12.8
Converse	1,280	1,050	1,124	1,200	1,210	- 70	-5.5
Crook	700	728	663	680	650	- 50	-7.1
Fremont	5,018	6,299	6,141	5,370	5,130	112	2.2
Goshen	1,362	1,328	1,398	1,360	1,480	118	8.7
Hot Springs	1,140	1,153	1,138	1,130	1,110	- 30	-2.6
Johnson	804	762	748	790	710	- 94	-11.7
Laramie	18,500	16,715	14,593	16,650	15,870	-2,630	-1.4
Lincoln	1,851	1,880	2,100	1,930	1,740	-111	-6.0
Natrona	15,935	15,139	15,442	14,920	15,090	-845	-5.3
Niobrara	745	692	700	670	610	-135	-18.1
Park	3,224	2,982	3,115	3,110	3,230	6	0.2
Platte	1,328	1,181	1,116	1,060	1,190	-138	-10.4
Sheridan	3,911	4,110	4,250	4,080	4,390	479	12.2
Sublette	635	697	639	680	710	75	11.8
Sweetwater	4,903	5,614	5,250	4,990	5,050	147	3.0
Teton	1,119	1,083	1,226	1,280	1,370	251	22.4
Uinta	1,347	1,235	1,370	1,290	1,250	- 97	-7.2
Washakie	1,809	1,738	1,770	1,570	1,620	-189	-10.4
Weston	1,605	1,527	1,538	1,280	1,640	35	2.2
Yellowstone National Park	1,327	1,181	1,212	1,278	1,310	- 17	-0.1
STATE	79,746	78,056	76,575	76,640	76,420	-3,326	-4.2

Source: Employment Security Commission annual and quarterly reports.

the serious reduction in employment. In Natrona County the shifting of personnel of the oil companies to areas outside the State may have affected the labor force. In the other counties it is more difficult to specify any particular cause for the decline in the work force.

Most people are aware of the continuous drain of manpower which has plagued the State for several decades. What is most disturbing from the standpoint of economic development is the increasing rate at which this out-migration seems to be taking place. In 1935, the Wyoming State Planning Board, in its population studies, stated that the State might well congratulate itself on its conservative population increase. This report discouraged any great advertising campaigns for the development of the State on the grounds that such zealous efforts very often resulted in abnormal conditions which tended to disrupt the economic life of the people in states where such campaigns were successful.[9] Such a "sober attitude", as it was then called, might even questionably have been laudable in the days of the depression, but with the rapidly changing economy and the development of the complex social structure of the present day world, as well as with the increased fiscal and other needs which growth imply, productive manpower has undoubtedly assumed tremendous importance. For Wyoming, as elsewhere, people have been the sine qua non of existence and growth. Unfortunately, for our State, it is in this very resource that depletion has been taking place at an ever increasing rate. One is led to wonder how long this trend may continue without producing accelerated effects on the economy of the State.

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[9] Wyoming State Planning Board, Population Studies, 1935, page 1.

APPENDIX B

TABLE I
AREA UNIVERSITIES AND COLLEGES
WYOMING STUDENTS IN ATTENDANCE, 1965

Name of School	Location	Number of Students
University of Arizona	Tucson, Arizona	31
American Institute for Foreign Trade	Phoenix, Arizona	1
Arizona State University	Tempe, Arizona	25
Arizona State College	Flagstaff, Arizona	3
Western State College	Gunnison, Colorado	4
Colorado Woman's College	Denver, Colorado	17
Otero Junior College	LaJunta, Colorado	1
Northeastern Junior College	Sterling, Colorado	1
St. Thomas Seminary	Denver, Colorado	12
Colorado State College	Greeley, Colorado	88
Mesa College	Grand Junction, Colorado	3
Trinidad State Junior College	Trinidad, Colorado	2
Rockmont College	Longmont, Colorado	3
Loretta Heights College	Loretta, Colorado	13
Cons. Baptist Theological Seminary	Denver, Colorado	3
Regis College	Denver, Colorado	8
Southern Colorado State College	Pueblo, Colorado	1
University of Denver	Denver, Colorado	94
Fort Lewis College	Durango, Colorado	2
Colorado School of Mines	Golden, Colorado	22
Colorado College	Colorado Springs, Colorado	10
Colorado State University	Fort Collins, Colorado	102
Idaho State University	Pocatello, Idaho	23
University of Idaho	Moscow, Idaho	14
Northwest Nazarene College	Nampa, Idaho	13
Boise College	Boise, Idaho	4
Ricks College	Rexburg, Idaho	100
Rocky Mountain College	Billings, Montana	15
College of Great Falls	Great Falls, Montana	1
Montana State University	Bozeman, Montana	74
Carroll College	Helena, Montana	22
Dawson Junior College	Glendive, Montana	1
Eastern Montana College	Billings, Montana	114
University of Montana	Missoula, Montana	44
Northern Montana College	Havre, Montana	1
Hastings College	Hastings, Nebraska	17
Grace Bible Institute	Omaha, Nebraska	2
University of Nebraska, College of Medicine	Omaha, Nebraska	2
Duchesne College	Omaha, Nebraska	1
McCook Junior College	McCook, Nebraska	1
Peru State College	Peru, Nebraska	1
Nebraska Wesleyan University	Lincoln, Nebraska	6
Kearney State College	Kearney, Nebraska	3
University of Nebraska	Lincoln, Nebraska	24

TABLE I (Concluded)

Name of School	Location	Number of Students
College of Saint Mary	Omaha, Nebraska	2
Concordia Teachers College	Seward, Nebraska	7
Doane College	Crete, Nebraska	1
York College	York, Nebraska	5
Union College	Lincoln, Nebraska	21
Chadron State College	Chadron, Nebraska	145
Midland College	Fremont, Nebraska	2
New Mexico Military Institute	Roswell, New Mexico	12
College of St. Joseph	Albuquerque, New Mexico	2
University of New Mexico	Albuquerque, New Mexico	10
New Mexico State University	University Park, New Mexico	7
Western New Mexico University	Silver City, New Mexico	1
New Mexico Highlands	Las Vegas, New Mexico	2
Northern State College	Aberdeen, South Dakota	2
Dakota Wesleyan University	Mitchell, South Dakota	4
University of South Dakota	Vermillion, South Dakota	4
Mount Marty College	Yankton, South Dakota	3
Sioux Falls College	Sioux Falls, South Dakota	13
South Dakota State University	Brookings, South Dakota	2
Huron College	Huron, South Dakota	2
Yankton College	Yankton, South Dakota	3
Southern State College	Springfield, South Dakota	1
Black Hills State College	Spearfish, South Dakota	76
South Dakota School of Mines	Rapid City, South Dakota	21
College of Southern Utah	Cedar City, Utah	2
Snow College	Ephraim, Utah	1
Westminister College	Salt Lake City, Utah	13
College of Eastern Utah	Price, Utah	1
Utah State University	Logan, Utah	97
Brigham Young University	Provo, Utah	292
Weber State College	Ogden, Utah	35
University of Utah	Salt Lake City, Utah	104
TOTALS		1,822

TABLE II

AREA BARBER AND BEAUTY SCHOOLS
WYOMING STUDENTS IN ATTENDANCE, 1965

Name of School	Location	Number of Students
Arizona Barber College	Phoenix, Arizona	2
State Barber College	Boise, Idaho	1
Acme Beauty College	Billings, Montana	20
Capitol Beauty School	Omaha, Nebraska	1
Adorn Beauty School	Scottsbluff, Nebraska	3
Greene's School of Beauty Culture	Rapid City, South Dakota	4
Salt Lake Barber College	Salt Lake City, Utah	11
Superior Beauty School	Ogden, Utah	1
TOTALS		43

TABLE III

AREA VOCATIONAL AND TECHNICAL SCHOOLS
WYOMING STUDENTS IN ATTENDANCE, 1965

Name of School	Location	Number of Students
Emily Griffith Opportunity School	Denver, Colorado	1
Engineering Drafting School	Denver, Colorado	4
National Camera, Inc.	Englewood, Colorado	10
National Electronics Institute	Denver, Colorado	8
Idaho State University--School of Trade and Technical Education	Pocatello, Idaho	1
Western College of Auctioneering	Billings, Montana	6
Nebraska Vocational-Technical School	Milford, Nebraska	4
Railway Educational Bureau	Omaha, Nebraska	12
Personnel Training Institute	Omaha, Nebraska	1
Salt Lake Trade Technical Institute	Salt Lake City, Utah	23
Utah Trade Technical Institute	Provo, Utah	7
TOTALS		77

TABLE IV

AREA NURSING SCHOOLS
WYOMING STUDENTS IN ATTENDANCE, 1965

Name of School	Location	Number of Students
St. Anthony Hospital School of Practical Nursing	Denver, Colorado	1
St. Luke's Hospital School of Nursing	Denver, Colorado	8
St. Mary-Corwin School of Nursing	Pueblo, Colorado	1
Mercy Hospital School of Nursing	Denver, Colorado	3
Seton School of Nursing	Colorado Springs, Colorado	1
St. Joseph Hospital School of Nursing	Denver, Colorado	6
Beth-el School of Nursing	Colorado Springs, Colorado	1
St. Alphonsus Hospital School of Nursing	Boise, Idaho	1
St. Patrick School of Nursing	Missoula, Montana	1
St. Joseph Hospital School of Nursing	Omaha, Nebraska	2
West Nebraska General Hospital School of Nursing	Scottsbluff, Nebraska	6
Bryan Memorial Hospital School of Nursing	Lincoln, Nebraska	1
Lincoln General Hospital School of Nursing	Lincoln, Nebraska	1
Mary Lanning Memorial Hospital School of Nursing	Hastings, Nebraska	3
Presbyterian Hospital School of Practical Nursing	Albuquerque, New Mexico	1
St. John's McNamara School of Nursing	Rapid City, South Dakota	11
Pierre School of Practical Nursing	Pierre, South Dakota	1
Methodist School of Nursing	Mitchell South Dakota	1
Sioux Valley Hospital School of Nursing	Sioux Falls, South Dakota	1
St. Benedict's School of Nursing	Ogden, Utah	8
TOTALS		59

TABLE V

AREA BUSINESS SCHOOLS
WYOMING STUDENTS IN ATTENDANCE, 1965

Name of School	Location	Number of Students
Lamson Business College	Tucson, Arizona	1
Greeley Commercial College	Greeley, Colorado	3
Barnes School of Commerce	Denver, Colorado	9
Parks School of Business	Denver, Colorado	69
Central Business College	Denver, Colorado	47
Link's School of Business	Boise, Idaho	4
Boise Secretarial Center	Boise, Idaho	1
Lewis-Clark Business College	Lewiston, Idaho	1
Billings Business College	Billings, Montana	59
Grand Island School of Business	Grand Island, Nebraska	1
Santa Fe Business College	Santa Fe, New Mexico	2
Nettleton Commercial College	Sioux Falls, South Dakota	1
Northwest College of Commerce	Huron, South Dakota	1
National College of Business	Rapid City, South Dakota	18
Stevens Henager College	Salt Lake City, Utah	14
Victor Comptometer School	Salt Lake City, Utah	4
LDS Business College	Salt Lake City, Utah	12
TOTALS		247

TABLE VI

MISCELLANEOUS AREA SCHOOLS
WYOMING STUDENTS IN ATTENDANCE, 1965

Name of School	Type of School	Location	Number of Students
May Arno School of Drama and Music	Arts	Denver, Colorado	2
Kensair Corporation	Flight	Bloomfield, Colorado	1
Lynch Flying Service	Flight	Billings, Montana	3
Black Hills Aviation	Flight	Spearfish, South Dakota	1
Maynard's School of Aeronautics	Flight	Rapid City, South Dakota	1
TOTALS			8

TABLE VII

RECAPITULATION OF AREA SCHOOLS
WYOMING STUDENTS IN ATTENDANCE, 1965

Type of School	Number of Students
Universities and Colleges (Table I)	1,822
Barber and Beauty Schools (Table II)	43
Vocational and Technical Schools	77
Nursing Schools	59
Business Schools	247
Miscellaneous: Arts	2
Flight	6
TOTALS	2,256

APPENDIX C

MANPOWER STUDY

Prepared by the
WYOMING DEPARTMENT OF LABOR AND STATISTICS
for the
RESEARCH OFFICE
ADULT EDUCATION DIVISION
UNIVERSITY OF WYOMING

In making the estimates and projections, consideration was given to actual and estimated population and civilian work force changes as published by various agencies of the federal government.

The labor force projection for 1970 was the result of applying state labor force participation rates to projected populations (ratio-correlation method) 14 years of age and over. These figures were then adjusted by material collected during the study from December 1, 1965 to March 1, 1966.

Heavy reliance was based on the information contained on Certificates of Age and Work Permits which are required of all persons 14 to 19 years of age who are gainfully employed and occupational data furnished by the Wyoming Selective Service System relative to all draft registrants 18 to 43 years of age. In addition, surveys, samples and interviews were used in the study. All data was corroborated by at least two or more sources for greater reliability.

Occupational and industrial breakdowns, while not strictly compatible with the census categories were derived from the Classified Index of Occupations and Industries 1960, U. S. Bureau of the Census. The same lack of strict comparability in regard to Bureau of Census or Labor Statistics Work Force numbers would also be true.

General use of a varied degree was also made of many studies by private sources and various state and federal agencies. No adjustments for seasonal variations were made.

M A N P O W E R   S T U D Y

	ESTIMATE 1965 MALE	ESTIMATE 1965 FEMALE	ESTIMATE 1965 TOTAL	PROJECTION 1970 MALE	PROJECTION 1970 FEMALE	PROJECTION 1970 TOTAL
PROFESSIONAL, TECHNICAL & KINDRED WORKERS	11,230	6,490	17,720	13,360	7,100	20,460
Accountants & Auditors	515	180	695	525	190	715
Architects	50		50	55		55
Artists & Art Teachers	56	44	100	75	60	135
Authors, Editors & Reporters	100	100	200	105	105	210
Chemists	150	12	162	165	14	179
Chiropractors	52	5	57	60	5	65
Clergymen	430	5	435	465	5	470
College Presidents, Professors & Instructors	525	125	650	850	170	1,020
Dentists	145		145	155		155
Designers & Draftsmen	290	60	350	300	65	365
Dietitians & Nutritionists	2	50	52	2	65	67
Engineers:	2,385	10	2,395	2,497	16	2,513
Aeronautical	20		20	22		22
Chemical	65		65	70		70
Civil	720	5	725	750	7	757
Electrical	550		550	565		565
Mechanical	160	3	163	170	4	174
Metallurgical	10		10	15		15
Mining & Petroleum	350		350	380		380
Others	510	2	512	525	5	530
Farm & Home Management Advisors	45	30	75	50	35	85
Foresters & Conservationists	350	4	354	365	6	371
Funeral Directors & Embalmers	60	N.A.	60	65		65
Lawyers & Judges	380	8	388	400	10	410
Librarians	20	220	240	30	245	275
Musicians & Music Teachers	180	350	530	195	380	575
Natural Scientists	850	40	890	900	60	960
Nurses, Professional	7	1,470	1,477	15	1,525	1,540
Optometrists	39		39	42		42
Osteopaths	10	2	12	10	2	12
Pharmacists	230	40	270	267	45	312
Physicians & Surgeons	307	10	317	335	12	347
Social Scientists	95	26	121	130	35	165

	ESTIMATE			PROJECTION		
		1965			1970	
	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
Social, Welfare, Religious & Recreation Worker	100	105	205	165	135	300
Surveyors	200	1	201	209	3	212
Teachers:	1,345	2,920	4,265	1,590	3,085	4,675
Elementary School	450	2,225	2,675	550	2,300	2,850
Secondary School	770	525	1,295	900	600	1,500
Others	125	170	295	140	185	325
Technicians	422	185	607	492	215	707
Medican & Dental	95	175	270	140	200	340
Electrical & Electronic	327	10	337	352	15	367
Therapists & Healers	96	50	146	112	65	177
Veterinarians	87	2	89	93	4	97
Other Professional Technical & Kindred Workers	1,707	436	2,143	2,641	543	3,184
FARM AND FARM MANAGERS	8,250	400	8,650	7,500	400	7,900
MANAGERS, OFFICIALS & PROPRIETORS-other than farm	11,900	2,365	14,265	13,000	2,570	15,570
Officials & Inspectors-State & Local Adm.	550	50	600	710	65	775
Managers, Officials & Proprietors	11,350	2,315	13,665	12,290	2,505	14,795
Construction	675	15	690	690	15	705
Manufacturing	875	25	900	925	30	955
Wholesale & Retail Trade	3,525	670	4,195	3,715	730	4,445
Finance, Insurance & Real Estate	625	25	650	680	30	710
Eating & Drinking Places	400	200	600	500	225	725
Others	5,250	1,380	6,630	5,780	1,475	7,255
CLERICAL & KINDRED WORKERS	4,225	11,740	15,965	4,435	13,000	17,435
Bookkeepers	300	2,300	2,600	235	2,375	2,610
Cashiers	N.A.	800	800		875	875
Mail Carriers	250		250	230		230
Office Machine Operators	25	300	325	35	500	535
Secretaries		2,600	2,600		2,900	2,900
Stenographers		800	800		930	930
Telephone Operators		440	440		370	370
Typists	N.A.	800	800		950	950
Others	3,650	3,700	7,350	3,935	4,100	8,035

	ESTIMATE			PROJECTION		
		1965			1970	
	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
SALES WORKERS	4,562	3,770	8,332	5,020	4,125	9,145
Insurance Agents, Brokers & Underwriters	650	90	740	700	110	810
Real Estate Agents & Brokers	327	105	432	425	115	540
Salesmen & Sales Clerks	3,585	3,575	7,160	3,895	3,900	7,795
Manufacturing	225	50	275	240	50	290
Wholesale Trade	410	75	485	400	75	475
Retail Trade	2,200	3,000	5,200	2,400	3,200	5,600
Others	750	450	1,200	855	575	1,430
CRAFTSMEN, FOREMEN AND KINDRED WORKERS	18,328	325	18,653	19,600	385	19,985
Bakers	115	5	120	115	5	120
Blacksmiths, Forgemen & Hammermen	85		85	75		75
Boilermakers	45		45	30		30
Cabinetmakers & Patternmakers	60		60	65		65
Carpenters	1,700		1,700	1,700		1,700
Compositors & Typesetters	240	11	251	280	18	298
Cranemen, Hoistmen & Construction Machine Op.	152		152	170		170
Electricians	950	1	951	1,000	1	1,001
Foremen	2,550	50	2,600	2,820	55	2,875
Linemen & Servicemen, Telegraph, Telephone, Power	680	6	686	810	6	816
Locomotive Engineers	395		395	350		350
Locomotive Firemen	240		240	200		200
Machinists & Job Setters	510		510	525		525
Masons, Tile Setters & Stone Cutters	255		255	260		260
Mechanics & Repairmen	2,035		2,035	1,865		1,865
Airplane	133	N.A.	133	150		150
Automobile	1,490	N.A.	1,490	1,300		1,300
Radio & Television	167	N.A.	167	175		175
Office Machine	30		30	35		35
Railroad	215		215	205		205
Other Mechanics & Repairmen	2,355		2,355	2,535		2,535
Millers, Grain, Flour, Feed, etc.	86	20	106	91	30	121
Millwrights	7		7	10		10
Motion Picture Projectionists	45		45	45		45

	ESTIMATE			PROJECTION		
		1965			1970	
	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
Painters (Construction) Paperhangers & Glaziers	570	15	585	585	20	605
Photo Engravers & Lithographers	5		5	5		5
Plasterers & Cement Finishers	140		140	140		140
Plumbers & Pipe Fitters	650		650	750		750
Pressmen & Plate Printers, Printing	67		67	75		75
Shoemakers & Repairers, except factory	42	6	48	35	6	41
Stationary Engineers	1,575	N.A.	1,575	1,800		1,800
Structural Metal Workers	135		135	150		150
Tinsmiths, Coppersmiths & Sheet Metal Workers	125		125	150		150
Others	2,514	211	2,725	2,964	244	3,208
OPERATIVES AND KINDRED WORKERS	16,520	1,915	18,435	17,755	2,065	19,820
Apprentices	400		400	520		520
Auto Mechanics	65		65	80		80
Bricklayers & Masons	25		25	30		30
Carpenters	90		90	110		110
Electricians	40		40	50		50
Machinists & Toolmakers	25		25	35		35
Plumbers & Pipe Fitters	35		35	50		50
Metalworking Trades	35		35	40		40
Printing Trades	20		20	35		35
Others	65		65	90		90
Attendants, Auto Service & Parking	1,400	50	1,450	1,500	75	1,575
Brakemen & Switchmen, Railroad	530		530	500		500
Bus Drivers	245	50	295	260	50	310
Dressmakers & Seamstresses, except factory		275	275		30	30
Laundry & Dry Cleaning Operatives	185	775	960	185	800	985
Meat Cutters, except slaughter & packing house	260	10	270	255	15	270
Mine Operatives & Laborers	4,200	N.A.	4,200	4,700		4,700
Painters, except construction & maintenance	50		50	60		60
Sawyers	175		175	185		185
Taxi Cab Drivers & Chauffeurs	105	16	121	90	15	105
Truck Drivers & Deliverymen	4,500	20	4,520	4,700	35	4,735
Other Special Operatives & Kindred Workers	1,560	424	1,984	1,650	700	2,350
Operatives and Kindred Workers	2,910	295	3,205	3,150	345	3,495

	ESTIMATE			PROJECTION		
		1965			1970	
	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
Manufacturing	1,375	165	1,540	1,440	200	1,640
Non-manufacturing	1,535	130	1,665	1,710	145	1,855
PRIVATE HOUSEHOLD WORKERS	N.A.	3,300	3,300		4,300	4,300
SERVICE WORKERS	5,000	8,945	13,945	5,375	9,640	15,015
Attendants, Hospital & Other Institutions	55	725	780	80	790	870
Barbers	355	5	360	380	10	390
Charwomen, Janitors & Porters	1,400	790	2,190	1,500	870	2,370
Cooks, Waiters, Bartenders & Counter Workers	1,175	4,125	5,300	1,285	4,250	5,535
Firemen, Fire Protection	230		230	250		250
Hairdressers & Cosmetologists	75	670	745	80	725	805
Policemen, Sheriffs, & Marshals	500	25	525	525	45	570
Practical Nurses	17	305	322	28	350	378
Others	1,193	2,300	3,493	1,247	2,600	3,847
FARM LABORERS AND FOREMEN	5,200	350	5,550	4,500	300	4,800
OTHER LABORERS, except farm and mine	5,550		5,550	5,650		5,650
Lumbermen, Raftsmen & Wood Choppers	185		185	185		185
Laborers	5,365		5,365	5,465		5,465
Manufacturing	590		590	640		640
Non-manufacturing	3,925		3,925	3,925		3,925
Others	850		850	900		900
ALL OTHERS	2,935	2,510	5,445	3,220	4,000	7,220
TOTALS	93,700	42,110	135,810	99,415	47,885	147,300

	PERCENT OF LABOR FORCE					
	ESTIMATE			PROJECTION		
	1965			1970		
	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
Professional, Technical & Kindred Workers	12.0	15.4	13.1	13.4	14.8	13.9
Farm and Farm Managers	8.9	0.9	6.3	7.5	0.8	5.4
Managers, Officials & Proprietors-other than farm	12.7	5.6	10.5	13.1	5.4	10.6
Clerical & Kindred Workers	4.5	27.9	11.8	4.5	27.2	11.8
Sales Workers	4.9	9.0	6.1	5.1	8.6	6.2
Craftsmen, Foremen and Kindred Workers	19.5	0.8	13.7	19.7	0.8	13.6
Operatives and Kindred Workers	17.6	4.5	13.6	17.9	4.3	13.5
Private Household Workers		7.8	2.4		8.9	2.8
Service Workers	5.3	21.3	10.3	5.4	20.2	10.2
Farm Laborers and Foremen	5.6	0.8	4.1	4.5	0.6	3.3
Other Laborers, except farm and mine	5.9		4.1	5.7		3.8
All Others	3.1	6.0	4.0	3.2	8.4	4.9
TOTALS	100.0	100.0	100.0	100.0	100.0	100.0

8.46% increase in Labor Force in Wyoming--1965 to 1970

N.A. signifies "Not Available" because information concerning this occupation was not available.

APPENDIX D

SELECTED CHARACTERISTICS OF WYOMING PEOPLE WITH SOME REFERENCE ON NATIONAL CHARACTERISTICS

Prepared
by
E. D. O'Dell
Coordinator, Research Services
Division of Adult Education and Community Service
The University of Wyoming
Laramie, Wyoming

In studying the "Needs of Adults for Education in Wyoming," a great deal of information has been accumulated and much of it may be of use to many people. In this respect, we are presenting a set of tables dealing with various characteristics of Wyoming people. It is hoped that this information will be of interest and help to the groups in Wyoming concerned with designing programs of education and help for our citizens.

Tables I through IV deal with educational achievements of people both in school and out. The tables are given in actual numbers and also in percentages. A breakdown into urban, rural non-farm and rural farm and into male and female is given.

Tables V, VI, VII and VIII deal primarily with characteristics of education, employment, income and occupation of various groups both in the United States and in Wyoming.

Tables IX, X, XI and XII deal with the income of people in Wyoming. The figures for urban, rural non-farm and rural farm are given. Statistics on county and city income are also given with a further breakdown by occupational groups in each county.

Table XIII shows the comparisons between education and earnings in the United States. Further information can be obtained by securing the various publications quoted in this set of tables.

Male - 168,532
Female - 160,462
Not Reported - 1,072
Total - 330,066

Urban - 187,551 (56.8%)
Rural, Non-Farm - 99,333 (30.1%)
Rural, Farm - 43,182 (13.1%)

Wyoming Total Population - 330,066: Percent Rural - 43.2; Percent Urban - 56.8; Percent Male - 51.2; Percent Female - 48.8.

TABLE I

YEARS OF SCHOOL COMPLETED BY PERSONS 14 TO 24 YEARS OLD NOT ENROLLED IN SCHOOL, BY YEARS OF AGE AND SEX, FOR THE STATE AND TOTALS FOR RURAL AND URBAN - 1960

Area, Age and Sex	Persons Not Enrolled in School		Years of School Completed						
			Elementary School			High School		College	
	Totals	% of Age	0-6	7-8	0-8	1-3	4	1-3	4 or more
THE STATE									
Total, 14 to 24 years	22,961	100.00	538	2,308	2,846	6,143	10,290	2,776	906
Male, 14 to 24 years	10,021	43.64	304	1,221	1,525	2,474	4,445	1,102	475
14 years	65	0.29	21	36	57	8	---	---	---
15 years	119	0.52	43	53	96	19	4	---	---
16 years	230	1.00	8	67	75	134	12	9	---
17 years	402	1.75	23	107	130	213	59	---	---
18 years	625	2.72	32	105	137	230	258	---	---
19 years	943	4.11	37	103	140	222	497	84	---
20 years	1,227	5.34	20	140	160	304	590	164	9
21 years	1,435	6.25	28	107	135	351	727	214	8
22 years	1,436	6.25	31	117	148	317	700	216	55
23 years	1,715	7.47	20	198	218	355	791	177	174
24 years	1,824	7.94	41	188	229	321	807	238	229
Female, 14 to 24 years	12,940	56.36	234	1,087	1,321	3,669	5,845	1,674	431
14 years	69	0.30	17	48	65	4	---	---	---
15 years	134	0.58	21	79	100	30	4	---	---
16 years	316	1.38	15	88	103	213	---	---	---
17 years	469	2.04	12	83	95	317	53	4	---
18 years	997	4.34	33	83	116	415	450	16	---
19 years	1,355	5.90	12	92	104	395	743	113	---
20 years	1,652	7.21	12	126	138	503	803	204	4
21 years	1,730	7.53	21	75	96	410	851	339	34
22 years	1,991	8.67	23	144	167	513	939	285	87
23 years	2,257	9.83	49	154	203	511	1,015	374	154
24 years	1,970	8.58	19	115	134	358	987	339	152
URBAN									
Total, 14 to 24 years	13,371	58.23	187	1,190	1,377	3,595	5,938	1,793	668
Male, 14 to 24 years	5,417	23.59	104	592	696	1,428	2,322	664	307
Female, 14 to 24 years	7,954	34.64	83	598	681	2,167	3,616	1,129	361
RURAL, NON-FARM									
Total, 14 to 24 years	6,974	30.74	308	833	1,141	1,880	3,108	647	198
Male, 14 to 24 years	3,231	14.07	172	431	603	743	1,493	253	139
Female, 14 to 24 years	3,743	16.30	136	402	538	1,137	1,615	394	59
RURAL, FARM									
Total, 14 to 24 years	2,616	11.39	43	285	328	668	1,244	336	40
Male, 14 to 24 years	1,373	5.98	28	198	226	303	630	185	29
Female, 14 to 24 years	1,243	5.41	15	87	102	365	614	151	11

Total in age group 14 to 24 years is 49,614. The percentage of those in this age group not enrolled in school is 46.28.

Source: 1960 Census of Population, Final Report PC(1)-52D, Table 102.

Male - 168,532
Female - 160,462
Not Reported - 1,072
Total - 330,066

Urban - 187,551 (56.8%)
Rural, Non-Farm - 99,333 (30.1%)
Rural, Farm - 43,182 (13.1%)

Wyoming Total Population - 330,066: Percent Rural - 43.2; Percent Urban - 56.8; Percent Male - 51.2; Percent Female - 48.8

TABLE II

YEARS OF SCHOOL COMPLETED BY PERSONS 14 TO 24 YEARS OLD NOT ENROLLED IN SCHOOL, BY YEARS OF AGE AND SEX, FOR THE STATE AND TOTALS FOR RURAL AND URBAN - 1960, BY PERCENTAGES

Area, Age and Sex	Persons Not Enrolled in School		Years of School Completed (%)						
			Elementary School			High School		College	
	Totals	% of Age	0-6	7-8	0-8	1-3	4	1-3	4 or more
THE STATE									
Total, 14 to 24 years	22,961	100.00	2.34	10.05	12.39	26.75	44.82	12.09	3.95
Male, 14 to 24 years	10,021	43.64	3.03	12.18	15.21	24.69	44.36	11.00	4.74
14 years	65	0.29	32.31	55.38	87.69	12.31	---	---	---
15 years	119	0.52	36.13	44.54	80.67	15.97	3.36	---	---
16 years	230	1.00	3.48	29.13	32.61	58.26	5.22	3.91	---
17 years	402	1.75	5.72	26.62	32.34	52.99	14.67	---	---
18 years	625	2.72	5.12	16.80	21.92	36.80	41.28	---	---
19 years	943	4.11	3.92	10.93	14.85	23.54	52.70	8.91	---
20 years	1,227	5.34	1.63	11.41	13.04	24.78	48.08	13.37	0.73
21 years	1,435	6.25	1.95	7.46	9.41	24.46	50.66	14.91	0.56
22 years	1,436	6.25	2.16	8.15	10.31	22.08	48.74	15.04	3.83
23 years	1,715	7.47	1.17	11.54	12.71	20.70	46.12	10.32	10.15
24 years	1,824	7.94	2.25	10.31	12.56	17.60	44.24	13.05	12.55
Female, 14 to 24 years	12,940	56.36	1.81	8.40	10.21	28.35	45.17	12.94	3.33
14 years	69	0.30	24.64	69.56	94.20	5.80	---	---	---
15 years	134	0.58	15.67	58.96	74.63	22.39	2.98	---	---
16 years	316	1.38	4.75	27.85	32.60	67.40	---	---	---
17 years	469	2.04	2.56	17.70	20.26	67.59	11.30	0.85	---
18 years	997	4.34	3.31	8.32	11.63	41.62	45.14	1.61	---
19 years	1,355	5.90	0.89	6.79	7.68	29.15	54.83	8.34	---
20 years	1,652	7.21	0.73	7.62	8.35	30.45	48.61	12.35	0.24
21 years	1,730	7.53	1.21	4.34	5.55	23.70	49.19	19.60	1.96
22 years	1,991	8.67	1.16	7.23	8.39	25.77	47.16	14.31	4.37
23 years	2.257	9.83	2.17	6.82	8.99	22.64	44.97	16.57	6.82
24 years	1,970	8.58	0.96	5.84	6.80	18.17	50.10	17.21	7.72
URBAN									
Total, 14 to 24 years	13,371	58.23	1.40	8.90	10.30	26.89	44.41	13.41	4.99
Male, 14 to 24 years	5,417	23.59	1.92	10.93	12.85	26.36	42.87	12.26	5.66
Female, 14 to 24 years	7,954	34.64	1.04	7.52	8.56	27.25	45.46	14.19	4.54
RURAL, NON-FARM									
Total, 14 to 24 years	6,974	30.74	4.42	11.94	16.36	26.96	44.57	9.28	2.83
Male, 14 to 24 years	3,231	14.07	5.32	13.34	18.66	23.00	46.21	7.83	4.30
Female, 14 to 24 years	3,743	16.30	3.63	10.74	14.37	30.38	43.15	10.53	1.57
RURAL, FARM									
Total, 14 to 24 years	2,616	11.39	1.65	10.89	12.54	25.54	47.55	12.84	1.53
Male, 14 to 24 years	1,373	5.98	2.04	14.42	16.46	22.07	45.89	13.47	2.11
Female, 14 to 24 years	1,243	5.41	1.21	7.00	8.21	29.36	49.40	12.15	0.88

Total in age group 14 to 24 years is 49,614. The percentage of those in this age group not enrolled in school is 46.28.

Source: 1960 Census of Population, Final Report PC(1)-52D, Table 102.

TABLE III
YEARS OF SCHOOL COMPLETED BY PERSONS 14 YEARS OLD AND OVER, BY AGE AND SEX, FOR THE STATE, 1960, AND FOR URBAN AND RURAL AREAS, 1960

Area, Age, and Sex	All Persons		Years of School Completed						
			Elementary School			High School		College	
	Total	% of Total	0-6	7-8	0-8	1-3	4	1-3	4 or more
THE STATE									
Total, 14 years & over	223,866		14,487	47,382	61,869	53,945	65,688	26,279	16,085
14 to 24 years	49,614	22.16	1,436	10,062	11,498	20,729	11,563	4,823	1,001
25 years & over	174,252	77.84	13,051	37,320	50,371	33,216	54,125	21,456	15,084
Male, 14 years & over	114,853	51.31	9,000	27,459	36,459	27,084	30,067	11,537	9,706
14 to 24 years	24,726	11.05	869	5,369	6,238	10,276	5,258	2,405	549
25 years & over	90,127	40.26	8,131	22,090	30,221	16,808	24,809	9,132	9,157
25 to 29 years	10,788	4.82	296	1,092	1,388	1,852	4,165	1,681	1,702
30 to 34 years	11,901	5.32	389	1,574	1,963	2,652	3,870	1,380	2,036
35 to 39 years	11,490	5.13	358	1,565	1,923	2,131	4,429	1,378	1,629
40 to 44 years	10,291	4.60	387	2,019	2,406	2,068	3,656	1,104	1,057
45 to 49 years	10,315	4.61	607	2,690	3,297	2,059	3,163	932	864
50 to 54 years	8,914	3.98	679	2,599	3,278	1,980	2,141	863	652
55 to 59 years	7,523	3.36	932	2,788	3,720	1,464	1,329	534	476
60 to 64 years	5,875	2.62	910	2,426	3,336	980	802	505	252
65 to 69 years	5,025	2.24	1,043	2,137	3,180	725	590	341	189
70 to 74 years	3,977	1.78	1,192	1,591	2,783	490	337	206	161
75 years & over	4,028	1.80	1,338	1,609	2,947	407	327	208	139
Female, 14 years & over	109,013	48.69	5,487	19,923	25,410	26,861	35,621	14,742	6,379
14 to 24 years	24,888	11.12	567	4,693	5,260	10,453	6,305	2,418	452
25 years & over	84,125	37.57	4,920	15,230	20,150	16,408	29,316	12,324	5,927
25 to 29 years	10,660	4.76	207	819	1,026	2,335	4,847	1,630	822
30 to 34 years	10,858	4.85	234	817	1,051	2,227	4,971	1,728	881
35 to 39 years	11,185	5.00	288	1,138	1,426	1,921	5,234	1,823	781
40 to 44 years	9,924	4.43	246	1,385	1,631	1,895	4,231	1,438	729
45 to 49 years	9,569	4.27	331	1,435	1,766	2,052	3,561	1,557	633
50 to 54 years	7,776	3.47	385	1,541	1,926	1,558	2,237	1,368	687
55 to 59 years	6,508	2.91	584	1,875	2,459	1,308	1,269	925	547
60 to 64 years	5,291	2.36	597	1,708	2,305	982	1,062	639	303
65 to 69 years	4,623	2.07	547	1,585	2,132	836	836	527	292
70 to 74 years	3,536	1.58	576	1,335	1,911	613	503	384	125
75 years & over	4,195	1.87	925	1,592	2,517	681	565	305	127
URBAN									
Total, 14 years & over	128,936	57.59	7,901	23,937	31,838	28,881	39,388	17,133	11,696
14 to 24 years	28,322	12.65	622	5,272	5,894	11,052	6,995	3,622	759
25 years & over	100,614	44.94	7,279	18,665	25,944	17,829	32,393	13,511	10,937
Male, 14 years & over	63,990	28.58	4,560	13,003	17,563	14,265	17,384	7,681	7,097
Female, 14 years & over	64,946	29.01	3,341	10,934	14,275	14,616	22,004	9,452	4,599
RURAL, NON-FARM									
Total, 14 years & over	65,779	29.39	4,754	15,608	20,362	17,661	18,209	6,224	3,323
14 to 24 years	14,710	6.58	680	3,300	3,980	6,527	3,244	761	198
25 years & over	51,069	22.81	4,074	12,308	16,382	11,134	14,965	5,463	3,125
Male, 14 years & over	34,755	15.52	3,003	9,209	12,212	9,044	8,826	2,647	2,026
Female, 14 years & over	31,024	13.87	1,751	6,399	8,150	8,617	9,383	3,577	1,297
RURAL, FARM									
Total, 14 years & over	29,151	13.02	1,832	7,837	9,669	7,403	8,091	2,922	1,066
14 to 24 years	6,582	2.94	134	1,490	1,624	3,150	1,324	440	44
25 years & over	22,569	10.08	1,698	6,347	8,045	4,253	6,767	2,482	1,022
Male, 14 years & over	16,108	7.20	1,437	5,247	6,684	3,775	3,857	1,209	583
Female, 14 years & over	13,043	5.82	395	2,590	2,985	3,628	4,234	1,713	483

Source: 1960 Census of Population, Final Report PC(1)-52D, Table 103.

TABLE IV.

YEARS OF .OOL COMPLETED BY PERSONS 14 YEARS OLD AND OVER, BY AGE AND ., FOR THE STATE, 1960, AND FOR URBAN AND RURAL AREAS, 1960, BY PERCENTAGES

Area, Age, and Sex	All Persons		Years of School Completed (%)						
			Elementary School			High School		College	
	Total	% of Total	0-6	7-8	0-8	1-3	4	1-3	4 or more
THE STATE									
Total, 14 years & over	223,866		6.47	21.17	27.64	24.10	29.34	11.74	7.18
14 to 24 years	49,614	22.16	2.89	20.28	23.17	41.78	23.31	9.72	2.02
25 years & over	174,252	77.84	7.49	21.42	28.91	19.06	31.06	12.31	8.66
Male, 14 years & over	114,853	51.31	7.84	23.91	31.75	23.58	26.17	10.05	8.45
14 to 24 years	24,726	11.05	3.51	21.71	25.22	41.56	21.27	9.73	2.22
25 years & over	90,127	40.26	9.02	24.51	33.53	18.65	27.53	10.13	10.16
25 to 29 years	10,788	4.82	2.74	10.12	12.86	17.17	38.61	15.58	15.78
30 to 34 years	11,901	5.32	3.27	13.23	16.50	22.28	32.52	11.60	17.11
35 to 39 years	11,490	5.13	3.12	13.62	16.74	18.54	38.55	11.99	14.18
40 to 44 years	10,291	4.60	3.76	19.62	23.38	20.10	35.52	10.73	10.27
45 to 49 years	10,315	4.61	5.88	26.08	31.96	19.96	30.66	9.04	8.38
50 to 54 years	8,914	3.98	7.62	29.16	36.78	22.21	24.02	9.68	7.31
55 to 59 years	7,523	3.36	12.39	37.06	49.45	19.46	17.67	7.10	6.33
60 to 64 years	5,875	2.62	15.49	41.29	56.78	16.68	13.65	8.60	4.29
65 to 69 years	5,025	2.24	20.76	42.53	63.29	14.43	11.74	6.78	3.76
70 to 74 years	3,977	1.78	29.97	40.01	69.98	12.32	8.47	5.18	4.05
75 years & over	4,028	1.80	33.22	39.95	73.17	10.10	8.12	5.16	3.45
Female, 14 years & over	109,013	48.69	5.03	18.28	23.31	24.64	32.68	13.52	5.85
14 to 24 years	24,888	11.12	2.28	18.86	21.14	42.00	25.33	9.72	1.81
25 years & over	84,125	37.57	5.85	18.10	23.95	19.50	34.85	14.65	7.05
25 to 29 years	10,660	4.76	1.94	7.68	9.62	21.91	45.47	15.29	7.71
30 to 34 years	10,858	4.85	2.16	7.52	9.68	20.51	45.78	15.92	8.11
35 to 39 years	11,185	5.00	2.57	10.18	12.75	17.17	46.80	16.30	6.98
40 to 44 years	9,924	4.43	2.48	13.95	16.43	19.10	42.63	14.49	7.35
45 to 49 years	9,569	4.27	3.46	15.00	18.46	21.44	37.21	16.27	6.62
50 to 54 years	7,776	3.47	4.95	19.82	24.77	20.04	28.77	17.59	8.83
55 to 59 years	6,508	2.91	8.97	28.81	37.78	20.10	19.50	14.21	8.41
60 to 64 years	5,291	2.36	11.28	32.28	43.56	18.56	20.07	12.08	5.73
65 to 69 years	4,623	2.07	11.83	34.29	46.12	18.08	18.08	11.40	6.32
70 to 74 years	3,536	1.58	16.29	37.75	54.04	17.34	14.23	10.85	3.54
75 years & over	4,195	1.87	22.05	37.95	60.00	16.23	13.47	7.27	3.03
URBAN									
Total, 14 years & over	128,936	57.59	6.13	18.57	24.70	22.40	30.55	13.28	9.07
14 to 24 years	28,322	12.65	2.20	18.61	20.81	39.02	24.70	12.79	2.68
25 years & over	100,614	44.94	7.23	18.55	25.78	17.72	32.20	13.43	10.87
Male, 14 years & over	63,990	28.58	7.13	20.32	27.45	22.29	27.17	12.00	11.09
Female, 14 years & over	64,946	29.01	5.14	16.84	21.98	22.50	33.89	14.55	7.08
RURAL, NON-FARM									
Total, 14 years & over	65,779	29.39	7.23	23.73	30.96	26.85	27.68	9.46	5.05
14 to 24 years	14,710	6.58	4.62	22.44	27.06	44.37	22.05	5.17	1.35
25 years & over	51,069	22.81	7.98	24.10	32.08	21.80	29.30	10.70	6.12
Male, 14 years & over	34,755	15.52	8.64	26.50	35.14	26.02	25.39	7.62	5.83
Female, 14 years & over	31,024	13.87	5.64	20.63	26.27	27.78	30.24	11.53	4.18
RURAL, FARM									
Total, 14 years & over	29,151	13.02	6.28	26.89	33.17	25.40	27.76	10.02	3.65
14 to 24 years	6,582	2.94	2.04	22.63	24.67	47.86	20.12	6.68	0.67
25 years & over	22,569	10.08	7.53	28.12	35.65	18.84	29.98	11.00	4.53
Male, 14 years & over	16,108	7.20	8.92	32.57	41.49	23.44	23.94	7.51	3.62
Female, 14 years & over	13,043	5.82	3.03	19.86	22.89	27.82	32.46	13.13	3.70

Source: 1960 Census of Population, Final Report PC(1)-52D, Table 103.

TABLE V
UNEMPLOYMENT, BY AGE, COLOR AND YEARS OF SCHOOL COMPLETED, MARCH 1964

YEARS OF SCHOOL COMPLETED (U.S. Totals)	PER CENT OF LABOR FORCE UNEMPLOYED, BY AGE				
	Total-- 18 & over	18-24	25-34	35-44	45-over
WHITE MALE TOTAL	4.7	10.4	3.6	3.5	4.3
Elementary:					
Less than 8 years*	8.1	16.8	9.5	8.4	7.0
8 years	6.5	21.4	8.6	5.4	5.4
High School:					
1 to 3 years	5.9	11.3	4.5	5.1	5.1
4 years	3.8	9.0	3.0	2.6	2.6
College:					
1 to 3 years	3.6	8.8	2.3	1.5	3.1
4 years or more	1.3	8.0	1.2	0.6	1.1
WHITE FEMALE TOTAL	5.4	8.6	6.1	5.2	4.0
Elementary:					
Less than 8 years*	8.9	**	8.1	15.4	6.2
8 years	6.0	14.2	7.6	7.3	4.7
High School:					
1 to 3 years	7.3	17.0	7.4	7.4	3.9
4 years	5.1	7.2	6.4	3.6	3.9
College:					
1 to 3 years	4.5	6.8	5.8	3.1	3.1
4 years or more	1.7	2.3	2.5	1.2	1.4
NON-WHITE MALE TOTAL	9.4	15.1	9.8	8.3	7.3
Elementary:					
8 years or less*	9.6	16.3	12.7	10.3	7.5
High School:					
1 to 3 years	11.3	22.0	11.5	4.6	7.8
4 years or more	7.6	8.8	6.9	8.5	6.3
NON-WHITE FEMALE TOTAL	10.8	25.8	11.3	6.8	6.1
Elementary:					
8 years or less*	8.9	**	12.8	9.2	6.7
High School:					
1 to 3 years	14.4	31.9	13.5	8.4	7.3
4 years or more	10.2	23.2	9.6	3.6	3.8

*Includes those with no schooling. **Less than 100,000 in category.

SOURCE: U. S. Department of Labor, MONTHLY LABOR REVIEW, May, 1965, Table 5, p. 521.

TABLE VI
EDUCATIONAL ATTAINMENT OF FAMILY HEADS, AND LOW INCOME,[1] 1961

EDUCATION OF HEAD OF FAMILY (U.S. Totals)	Number of All Families	Number of Low Income[1] Families	Low Income[1] Families as Per Cent of All Families	The Group's Low Income[1] Families as a Per Cent of all Low Income Families
	(millions)	(millions)	(per cent)	(per cent)
Less than 8 years	7.7	3.6	46.7	36
8 years	8.6	2.5	29.0	25
Some high school (9-11 years)	8.6	1.7	19.8	17
High School Graduates	12.2	1.5	12.3	15
Some College (over 12 years)	9.3	0.7	7.5	7
TOTALS	46.4	10.0	21.6	100

[1] Low income is cash family annual income less than $3,000.

SOURCE: Bureau of the Census, CURRENT POPULATION REPORTS, Series P-60, No. 39, February, 1963.

TABLE VII
EDUCATIONAL ATTAINMENT AND PERSISTENCE OF LOW INCOME

Education of Family Head (U.S. Totals)	Per Cent of Families with Income under $3,000 in 1962 who also had income under $3,000 in 1963
Less than 8 years	79
8 years	72
9-11 years	64
12 years	53
13-15 years	54
16 years or more	40

SOURCE: ECONOMIC REPORT OF THE PRESIDENT, January, 1965, Table 19, p. 164.

TABLE VIII
OCCUPATION GROUP OF EMPLOYED MALES, URBAN & RURAL, WYOMING, 1960

Occupation Group	The State	Urban	Rural Non-farm	Rural Farm	Percentage Distribution The State	Percentage Distribution Urban	Percentage Distribution Rural Non-farm	Percentage Distribution Rural Farm
Total Employed	85,762	47,953	24,243	13,566	100.0	100.0	100.0	100.0
Professional, Managerial & Kindred Workers	9,213	7,008	2,065	140	10.7	14.6	8.5	1.0
Farmers & Farm Managers	8,974	469	918	7,587	10.5	1.0	3.8	55.9
Craftsmen, Foremen, & Kindred Workers	17,488	10,662	6,254	572	20.4	22.2	25.8	4.2
Operatives & Kindred Workers	13,953	8,043	5,303	607	16.3	16.8	21.9	4.5
Farm Laborers & Farm Foremen	5,624	594	1,525	3,505	6.6	1.2	6.3	25.8
Laborers Except Farm and Mine	5,388	3,166	1,925	297	6.3	6.6	7.9	2.2
Managers, Officials & Proprietors Except Farm	10,848	7,634	2,859	355	12.6	15.9	11.8	2.6
Clerical & Kindred Workers	4,000	3,044	843	113	4.7	6.3	3.5	0.8
Sales Workers	3,795	2,952	753	90	4.4	6.2	3.1	0.7
Private Household Workers	92	59	29	4	0.1	0.1	0.1	---
Service Workers Except Private Household	4,374	3,107	1,170	97	5.1	6.5	4.8	0.7
Not Reported	2,013	1,215	599	199	2.3	2.5	2.5	1.5

SOURCE: 1960 Census of Population, Vol. I, Part 52C, Table 57.

TABLE IX

INCOME OF URBAN, RURAL NON-FARM, AND RURAL FARM FAMILIES IN WYOMING, 1960

Income Ranges	Number of Families				Percent of Families			
	State	Urban	Rural Non-Farm	Rural Farm	State	Urban	Rural Non-Farm	Rural Farm
Total	83,550	48,287	24,593	10,670	100.0	100.0	100.0	100.0
Under $1,000	2,821	1,257	770	794	3.4	2.6	3.1	7.4
$ 1,000 - $ 1,999	4,656	2,172	1,525	959	5.6	4.5	6.2	9.0
$ 2,000 - $ 2,999	6,297	3,040	1,746	1,511	7.5	6.3	7.1	14.2
$ 3,000 - $ 3,999	8,333	3,963	2,726	1,644	10.0	8.2	11.1	15.4
$ 4,000 - $ 4,999	9,764	5,237	3,271	1,256	11.7	10.8	13.3	11.8
$ 5,000 - $ 5,999	11,295	6,495	3,718	1,082	13.5	13.5	15.1	10.1
$ 6,000 - $ 6,999	10,368	5,964	3,503	901	12.4	12.4	14.2	8.4
$ 7,000 - $ 7,999	7,847	4,941	2,360	546	9.4	10.2	9.6	5.1
$ 8,000 - $ 8,999	5,822	3,800	1,611	411	7.0	7.9	6.6	3.9
$ 9,000 - $ 9,999	4,184	2,941	961	282	5.0	6.1	3.9	2.6
$10,000 - $14,999	8,766	6,163	1,832	771	10.5	12.8	7.4	7.2
$15,000 - $24,999	2,566	1,795	429	342	3.1	3.7	1.7	3.2
$25,000 and over	831	519	141	171	1.0	1.1	0.6	1.6
Median Income	$5,877	$6,332	$5,607	$4,340				

Percent Families with Incomes less than $3,000 per annum:

State	16.5%
Urban	13.4%
Rural Non-Farm	16.4%
Rural Farm	30.6%

SOURCE: 1960 Census of Population, Vol. I, Part 52C, Table 65.

TABLE X
INCOME OF FAMILIES IN WYOMING BY COUNTIES, 1960

Counties	All Families	Under $1,000	$1,000 $1,999	$2,000 $2,999	$3,000 $3,999	$4,000 $4,999	$5,000 $5,999	$6,000 $6,999	$7,000 $7,999	$8,000 $8,999	$9,000 $9,999	$10,000 $14,999	$15,000 $24,999	$25,000 & over	Median Family Income
Albany	5,155	188	308	492	473	551	693	670	512	303	246	570	141	8	$5,816
Big Horn	2,960	163	276	285	405	434	413	372	256	120	79	134	15	8	4,809
Campbell	1,528	37	87	65	164	169	222	217	95	93	81	184	61	53	6,092
Carbon	3,763	149	214	246	352	429	540	422	392	228	185	476	111	19	5,910
Converse	1,688	78	112	159	234	245	208	196	143	94	74	93	35	17	5,077
Crook	1,209	81	108	143	174	123	132	134	97	83	40	63	23	8	4,801
Fremont	6,172	269	433	484	616	697	858	837	606	431	227	515	152	47	5,684
Goshen	3,152	153	385	361	402	407	373	248	158	144	134	241	101	45	4,676
Hot Springs	1,554	52	128	146	108	174	171	184	167	123	110	133	45	13	5,988
Johnson	1,427	68	79	144	191	181	202	182	100	67	41	108	48	16	5,250
Laramie	15,666	254	525	920	1,402	1,807	2,228	1,805	1,469	1,360	1,016	2,158	543	179	6,386
Lincoln	2,127	120	154	263	303	296	258	247	150	127	70	103	32	4	4,755
Natrona	12,679	320	519	536	745	1,018	1,507	1,775	1,445	1,146	859	1,960	636	213	6,955
Niobrara	1,095	31	96	110	197	132	128	115	67	33	53	75	28	30	4,860
Park	4,195	156	273	361	467	532	518	477	444	269	193	400	93	12	5,596
Platte	1,963	101	171	206	274	267	247	238	155	94	66	112	24	8	4,860
Sheridan	4,893	206	337	456	626	622	651	604	386	270	194	362	129	50	5,306
Sublette	986	34	51	103	150	109	126	88	94	33	49	109	28	12	5,365
Sweetwater	4,567	60	125	382	375	665	815	637	538	303	188	348	92	39	5,830
Teton	831	21	39	29	96	129	93	108	70	62	29	94	42	19	6,079
Uinta	1,750	58	87	125	196	282	303	211	124	94	65	153	49	3	5,419
Washakie	2,162	155	101	147	202	208	234	347	182	190	98	199	75	24	6,098
Weston	1,944	67	48	134	177	283	350	239	185	143	79	172	63	4	5,751
Yellowstone	84	---	---	---	4	4	25	15	12	12	8	4	---	---	---
TOTAL	83,550	2,821	4,656	6,297	8,333	9,764	11,295	10,368	7,847	5,822	4,184	8,766	2,566	831	

SOURCE: 1960 Census of Population, Vol. I, Part 52, Table 86.

TABLE XI
FAMILY INCOME IN URBAN CENTERS OF WYOMING AS COMPARED TO FAMILY INCOME IN COUNTIES, 1960

Counties		Urban Centers of 10,000 or more			Urban Centers of 2,500 to 10,000		
	Median Family Income		Median Family Income Dollars	Pct. of Co. Avg.		Median Family Income Dollars	Pct. of Co. Avg.
Albany	$5,816	Laramie	$6,059	104			
Big Horn	4,809						
Campbell	6,092				Gillette	$5,853	96
Carbon	5,910				Rawlins	6,447	109
Converse	5,077				Douglas	5,391	106
Crook	4,801						
Fremont	5,684				Lander	5,589	98
					Riverton	6,614	116
Goshen	4,676				Torrington	4,895	105
Hot Springs	5,988				Thermopolis	6,565	110
Johnson	5,250				Buffalo	5,112	97
Laramie	6,386	Cheyenne	6,575	103			
Lincoln	4,755						
Natrona	6,955	Casper	7,157	103			
Niobrara	4,860						
Park	5,596				Cody	7,000	125
					Powell	5,647	101
Platte	4,860						
Sheridan	5,306	Sheridan	5,553	105			
Sublette	5,365						
Sweetwater	5,830	Rock Springs	5,906	101	Green River	6,340	109
Teton	6,079						
Uinta	5,419				Evanston	5,464	101
Washakie	6,098				Worland	6,545	107
Weston	5,751				Newcastle	6,258	109

SOURCE: 1960 Census of Population, Vol. I, Part 52C, Tables 71 & 81.

TABLE XII
MEDIAN EARNINGS OF MALES IN SELECTED OCCUPATION GROUPS, WYOMING, 1960

Counties	All Males	Professional, Managerial & Kindred Workers	Farmers & Farm Managers	Craftsmen, Foremen & Kindred Workers	Operatives & Kindred Workers	Farm Laborers & Farm Foremen	Laborers Except Farm & Mine
Albany	$4,455	$6,147	$2,824	$5,500	$3,522	$1,803	$3,314
Big Horn	3,827	5,355	2,963	5,145	4,208	1,923	---
Campbell	4,887	5,345	5,630	5,322	4,558	---	---
Carbon	4,958	6,536	4,477	5,994	5,003	2,006	3,871
Converse	4,391	5,256	3,407	5,509	5,232	2,092	---
Crook	3,652	---	3,313	---	4,369	---	---
Fremont	4,678	5,865	3,347	5,475	4,872	1,747	3,301
Goshen	4,002	5,662	4,083	4,433	3,947	2,064	---
Hot Springs	4,813	6,020	---	6,210	5,615	---	---
Johnson	4,158	5,113	5,933	4,761	4,263	2,372	---
Laramie	5,289	6,873	4,563	5,756	4,664	1,930	3,227
Lincoln	3,675	5,375	2,443	4,724	4,100	2,250	---
Natrona	5,885	7,433	---	6,084	5,607	1,650	3,326
Niobrara	3,669	---	3,671	---	---	---	---
Park	4,467	6,487	2,973	5,636	5,312	2,081	2,369
Platte	4,075	5,341	3,477	5,393	4,174	1,786	---
Sheridan	4,233	5,827	3,736	4,841	3,701	2,286	2,535
Sublette	4,225	---	3,405	---	4,865	---	---
Sweetwater	4,972	6,081	---	5,541	5,060	---	3,797
Teton	4,803	6,473	---	---	---	---	---
Uinta	4,485	5,278	---	5,252	3,891	---	---
Washakie	4,733	6,681	3,548	5,515	5,127	1,975	---
Weston	4,853	5,918	---	5,398	4,960	---	---

Occupation groups not specifically listed are included in "All Males".

SOURCE: 1960 Census of Population, Vol. I, Part 52C, Table 86.

TABLE XIII
EDUCATION AND LIFETIME EARNINGS: MEN[1]
(Earnings from age 18 to 64)
(U.S. Totals)

Highest Grade Completed	Earnings at 1960 rates[2]
All education groups	$229,000
Elementary School:	
Less than 8 years	143,000
8 years	184,000
High School:	
1 to 3 years	212,000
4 years	247,000
College:	
1 to 3 years	293,000
4 years	385,000
5 years or more	455,000

[1] Herman P. Miller: RICH MAN, POOR MAN, 1964, p. 148.

[2] These are the total amounts that a man with the specified education would earn from age 18 to age 64 if he earned at each year of age the average income that a man of that age and education earned in 1960.

APPENDIX E

TABLE I
PUBLIC SCHOOL ADULT EDUCATION CLASSES IN WYOMING
Fall, 1965

	Areas Served by Community College		Areas Not Served by Community College	
Name of Class	Number of Classes	Number of People	Number of Classes	Number of People
Bookkeeping	2	25	5	71
Typing	2	24	6	100
Shorthand	1	16	4	48
Stenoscript	--	--	2	39
Business Machines	1	9	2	35
Basic Computer Systems	1	13	--	--
Business English	--	--	1	23
English	--	--	6	90
English for Foreign Born	--	--	1	14
Reading Improvement	1	34	4	80
Ballroom Dancing	1	22	--	--
Driver Education	1	4	4	79
Basic Adult Education	--	--	2	23
Bridge	2	33	--	--
Cake Decorating	1	7	1	33
Sewing	3	36	8	128
Knitting	1	10	2	69
Art	2	25	5	90
Flower Arranging	1	14	--	--
Ceramics	--	--	4	79
Tailoring	1	11	--	--
Spanish	1	16	2	18
Geometry	--	--	1	2
Algebra	--	--	2	15
American History	--	--	1	14
General Math	--	--	3	51
Modern Math for Parents	--	--	6	222
Taxation	--	--	1	15
Investments	--	--	1	20
Shop	1	10	2	25
Veterinary Science	1	17	--	--
Mechanical Drawing	--	--	1	7
Welding	3	39	6	49
Auto Mechanics	1	10	1	20
Civil Defense	1	25	2	46
Radiological Monitoring	--	--	1	12
Americanization	--	--	1	15
Lapidary	--	--	1	7
Swimming	--	--	2	65
Golf	1	11	--	--
Ground School for Private Pilots	1	16	--	--
Horseshoeing	1	14	--	--
Modern Dance	1	7	--	--

TABLE I (Concluded)

Name of Class	Areas Served by Community College		Areas Not Served by Community College	
	Number of Classes	Number of People	Number of Classes	Number of People
Carpentry	1	10	--	--
Foods	1	20	--	--
Recreation (Men)	--	--	2	91
Recreation (Women)	--	--	1	24
Fat Man's Class	1	14	--	--
Slimnastics	1	17	--	--
Apprentice Electrician	--	--	1	15
Apprentice Plumber	--	--	1	14
Apprentice Sheetmetal	--	--	1	6
U.P.R.R. Apprentice	--	--	1	10
TOTALS	37	509	98	1,764

TABLE II
FUTURE PUBLIC SCHOOL ADULT EDUCATION CLASSES IN WYOMING
(1966-1967)

Name of Class	Areas Served by Community College Number of Classes Planned	Areas Not Served by Community College Number of Classes Planned
Bookkeeping	2	9
Typing	3	10
Shorthand	2	8
English	1	6
Math	1	2
Foreign Language (Spanish)	1	6
Basic Mathematics	1	--
Home Economics	1	2
Sewing	4	8
Welding	3	6
Industrial Arts	--	4
Farm Building Construction	--	1
Civil Defense	1	2
Recreation	--	4
Art	3	1
Basic Adult Education	--	2
Veterinary Science	1	--
Economics in Agriculture	1	--
Woodshop	1	--
Driver Education	1	--
Horseshoeing	2	--
Reading Improvement	1	--
Salesmanship	1	--
Self Defense for Women	1	--
Ballroom Dancing	1	--
Bridge	2	--
Fat Man's Class	1	--
Golf	1	--
Slimnastics	1	--
Swimming	1	--
Cake Decorating	1	--
Child Care and Development	1	--
Flower Arranging	1	--
Yarncraft	1	--
TOTALS	43	71

TABLE III
RETURNS ON ADULT EDUCATION QUESTIONNAIRE TO THE PUBLIC SCHOOLS OF WYOMING

Question #6. From what source or sources is the cost derived for conducting your adult education programs?

Source	Number of Schools
a. Tuition and fees	35
b. Tax funds (general operating)	2
c. Combination of "a" and "b"	12
d. Special levy	0
e. Other (please list)	
1. Charitable donations	1
2. Federal funds	1
3. State funds	6
4. State and Federal funds	2
5. Indian Tribal funds	1

Question #7. What is the general attitude in the community toward an adult education program?

Attitude	Number Replying
a. Adults generally not interested.	25
b. There are presently too many activities for adults	16
c. Some interest but lack of resources for program.	31
d. Much interest.	16

Question #8. Which one thing listed below would most help to assure the success of your adult education program?

Needs	Number Replying
a. A full-time person trained in adult education.	17
b. Additional money for program experimentation.	32
c. Better community acceptance.	20
d. More assistance from the University.	3
e. Other:	
1. Finances for director and classes.	2
2. More time.	1

TABLE III (Concluded)

Question #9. Do you have any special program for dropouts or potential dropouts?

Yes 6 No 79

Question #11. Have you made any studies of your graduates?

Yes 34 No 46

Question #13. Who do you believe is responsible for the technical, vocational or retraining programs in Wyoming?

Agency	Number Replying
1. Local district	29
2. Colleges and University	16
3. State Department	37

Question #16. Where do you select instructors?

Source	Number Replying
a. From the public school faculty.	55
b. Certified teachers in community.	30
c. Local skilled and professional people.	36

APPENDIX TABLE I
INDEXES OF OUTPUT PER MAN-HOUR AND RELATED DATA, 1947-64
(1957-59=100)

Year	Output per man-hour					Output[1]					Man-hours				
			Nonagricultural industries					Nonagricultural industries					Nonagricultural industries		
	Total Private	Agriculture	Total	Manufacturing	Non-Manufacturing	Total Private	Agriculture	Total	Manufacturing	Non-Manufacturing	Total Private	Agriculture	Total	Manufacturing	Non-Manufacturing
Establishment basis[2]															
1947	70.9	50.2	76.3	75.1	76.8	68.4	81.2	67.7	71.4	65.9	96.5	161.8	88.7	95.1	85.8
1948	73.4	59.6	77.9	78.2	77.5	71.2	92.8	70.0	73.9	68.1	97.0	155.8	89.9	94.5	87.9
1949	75.5	56.8	80.8	81.8	80.5	70.8	88.0	69.8	70.4	69.6	93.8	154.8	86.4	86.1	86.5
1950	80.9	64.7	85.1	85.1	84.9	77.3	92.8	76.4	79.6	74.9	95.6	143.4	89.8	93.5	88.2
1951	82.9	64.0	86.5	87.1	86.0	82.0	87.0	81.7	87.6	78.9	98.9	136.0	94.4	100.6	91.7
1952	84.7	69.9	87.6	88.2	87.1	84.4	90.4	84.1	90.2	81.2	99.6	129.4	96.0	102.3	93.2
1953	88.2	77.8	90.0	89.5	90.0	88.6	93.7	88.3	96.1	84.6	100.5	120.5	98.1	107.4	94.0
1954	89.8	83.4	91.4	90.9	91.4	87.2	97.6	86.6	89.2	85.3	97.1	117.0	94.7	98.1	93.3
1955	93.8	86.4	95.3	96.8	94.3	95.0	102.9	94.5	100.3	91.8	101.3	119.1	99.2	103.6	97.3
1956	93.9	88.3	94.9	95.1	94.6	97.0	100.5	96.8	100.0	95.3	103.3	113.8	102.0	105.2	100.7
1957	97.2	94.2	97.6	97.8	97.5	98.9	99.0	98.9	101.2	97.9	101.7	105.1	101.3	103.5	100.4
1958	99.6	103.0	99.4	99.1	99.7	97.0	100.5	96.8	94.2	98.0	97.4	97.6	97.4	95.1	98.3
1959	103.2	102.8	103.0	103.3	102.8	104.1	100.0	104.3	104.6	104.1	100.9	97.3	101.3	101.3	101.3
1960	105.2	109.3	104.6	103.8	105.1	106.8	104.8	106.9	104.8	107.9	101.5	95.9	102.2	101.0	102.7
1961	108.9	116.3	107.8	106.7	108.5	108.7	104.8	108.9	104.8	110.9	99.8	90.1	101.0	98.2	102.2
1962	113.8	119.1	112.6	112.6	112.5	115.7	104.8	116.4	115.2	116.9	101.7	88.0	103.4	102.3	103.9
1963	117.0	130.3	115.0	115.4	115.1	119.8	108.7	120.4	119.2	121.1	102.4	83.4	104.7	103.3	105.2
1964[3]	120.5	134.4	118.3	119.7	117.7	125.6	108.2	126.6	126.3	126.8	104.2	80.5	107.0	105.5	107.7
Labor force basis[4]															
1947	68.5	50.2	73.8	(5)	(5)	68.4	81.2	67.7	(5)	(5)	99.8	161.8	91.7	(5)	(5)
1948	70.6	59.6	74.5	(5)	(5)	71.2	92.8	70.0	(5)	(5)	100.9	155.6	93.9	(5)	(5)
1949	72.0	56.4	76.9	(5)	(5)	70.8	88.0	69.8	(5)	(5)	98.3	156.1	90.8	(5)	(5)

APPENDIX TABLE I (Continued)

INDEXES OF OUTPUT PER MAN-HOUR AND RELATED DATA, 1947-64

(1957-59=100)

Year	Output per man-hour					Output[1]					Man-hours				
			Nonagricultural industries					Nonagricultural industries					Nonagricultural industries		
	Total Private	Agriculture	Total	Manufacturing	Non-Manufacturing	Total Private	Agriculture	Total	Manufacturing	Non-Manufacturing	Total Private	Agriculture	Total	Manufacturing	Non-Manufacturing
1950	77.5	64.5	81.4	(5)	(5)	77.3	92.8	76.4	(5)	(5)	99.7	143.9	93.9	(5)	(5)
1951	81.1	63.6	84.7	(5)	(5)	82.0	87.0	81.7	(5)	(5)	101.1	136.8	96.5	(5)	(5)
1952	83.7	69.4	86.7	(5)	(5)	84.4	90.4	84.1	(5)	(5)	100.8	130.2	97.0	(5)	(5)
1953	87.5	77.3	89.5	(5)	(5)	88.6	93.7	88.3	(5)	(5)	101.3	121.2	98.7	(5)	(5)
1954	89.7	83.0	91.5	(5)	(5)	87.2	97.6	86.6	(5)	(5)	97.2	117.6	94.6	(5)	(5)
1955	94.1	85.9	95.8	(5)	(5)	95.0	102.9	94.5	(5)	(5)	101.0	119.8	98.6	(5)	(5)
1956	94.4	87.8	95.7	(5)	(5)	97.0	100.5	96.8	(5)	(5)	102.7	114.5	101.2	(5)	(5)
1957	97.5	94.2	98.0	(5)	(5)	98.9	99.0	98.9	(5)	(5)	101.4	105.1	100.9	(5)	(5)
1958	99.1	103.1	98.8	(5)	(5)	97.0	100.5	96.8	(5)	(5)	97.9	97.5	98.0	(5)	(5)
1959	103.4	102.7	103.2	(5)	(5)	104.1	100.0	104.3	(5)	(5)	100.7	97.4	101.1	(5)	(5)
1960	104.8	109.3	104.1	(5)	(5)	106.8	104.8	106.9	(5)	(5)	101.9	95.9	102.7	(5)	(5)
1961	107.5	116.8	106.1	(5)	(5)	108.7	104.8	108.9	(5)	(5)	101.1	89.7	102.6	(5)	(5)
1962	112.4	119.4	111.1	(5)	(5)	115.7	104.8	116.4	(5)	(5)	102.9	87.8	104.8	(5)	(5)
1963	115.5	130.6	113.2	(5)	(5)	119.8	108.7	120.4	(5)	(5)	103.7	83.2	106.4	(5)	(5)
1964[3]	118.8	134.9	116.1	(5)	(5)	125.6	108.2	126.6	(5)	(5)	105.7	80.2	109.0	(5)	(5)

[1] Output refers to gross national product in 1954 prices.

[2] Man-hour estimates based primarily on establishment data.

[3] Preliminary.

[4] Man-hour estimates based primarily on labor force data.

[5] Not available.

NOTE: For information of sources and methodology see Bureau of Labor Statistics (Department of Labor) Bulletin No. 1249, Trends in Output Per Man-hour in the Private Economy, 1909-58. Data for Alaska and Hawaii included beginning 1960.

Source: Department of Labor, Bureau of Labor Statistics.

APPENDIX TABLE II
WYOMING POPULATION BY COUNTIES
1930--1965

COUNTIES	1930	1940	1950	1960	1965
Albany	12,041	13,946	19,055	21,290	24,470
Big Horn	11,222	12,911	13,176	11,898	11,620
Campbell	6,720	6,048	4,839	5,861	7,140
Carbon	11,391	12,644	15,742	14,937	14,090
Converse	7,145	6,631	5,933	6,366	6,160
Crook	5,333	5,463	4,738	4,691	5,020
Fremont	10,490	16,095	19,580	26,168	28,860
Goshen	11,754	12,207	12,634	11,941	11,610
Hot Springs	5,476	4,607	5,250	6,365	6,390
Johnson	4,816	4,980	4,707	5,475	5,510
Laramie	26,845	33,651	47,662	60,149	63,570
Lincoln	10,984	10,286	9,023	9,018	9,260
Natrona	24,272	23,858	31,437	49,623	49,900
Niobrara	4,723	5,988	4,701	3,750	3,720
Park	8,207	10,976	15,182	16,874	16,770
Platte	9,695	8,013	7,925	7,195	7,220
Sheridan	16,875	19,255	20,185	18,989	18,740
Sublette	1,944	2,778	2,481	3,778	4,410
Sweetwater	18,165	19,407	22,017	17,920	17,710
Teton	2,003	2,543	2,593	3,062	3,900
Uinta	6,572	7,223	7,331	7,484	7,400
Washakie	4,109	5,858	7,252	8,883	7,650
Weston	4,673	4,958	6,733	7,929	6,990
Yellowstone National Park	200	416	353	420	457
TOTALS	225,565	250,742	290,529	330,066	338,570
Percent Increase Over Previous Census		11.2%	15.5%	13.6%	2.6%

Source: Bureau of Census, Wyoming Population 1930, 1940, 1950, 1960.
1965 estimates from Gandi R. Rajender, "Population Estimates of Wyoming Counties, April 1, 1965,"Wyoming Trade Winds, June, 1966.

APPENDIX TABLE III
WYOMING EMPLOYMENT BY OCCUPATION, 1940--1960

Major Occupation Group	1940	% of Total	1950	% of Total	% Change over 1940	1960	% of Total	% Change over 1950
Professional, technical, and kindred workers	6,761	8.2	10,049	9.3	1.1	14,593	12.1	2.8
Farmers and Farm Managers	13,963	17.0	12,239	11.3	-5.7	9,433	7.8	-3.5
Managers, officials, and proprietors except farm	8,305	10.1	10,649	9.9	-0.2	12,898	10.7	0.8
Clerical and kindred workers	5,130	6.2	9,994	9.3	3.1	14,344	11.9	2.6
Sales Workers	4,147	5.0	5,829	5.4	0.4	6,854	5.7	0.3
Craftsmen, foremen, and kindred workers	9,600	11.7	15,102	14.0	2.3	17,727	14.7	0.7
Operatives and kindred workers*	11,263	13.7	15,945	14.8	1.1	15,433	12.8	-2.0
Private Household workers	1,937	2.4	1,454	1.3	-1.1	2,978	2.5	1.2
Service Workers, except private household	5,599	6.8	8,772	8.1	1.3	11,795	9.8	1.7
Farm Laborers, unpaid family workers	1,850	2.2	2,126	2.0	-0.2	925	0.8	-1.2
Farm Laborers, except unpaid, and farm foremen	9,066	11.0	7,297	6.8	-4.2	5,081	4.2	-2.6
Laborers, except farm and mine	4,055	4.9	6,688	6.2	1.3	5,487	4.5	-1.7
Occupation not reported	583	0.7	1,692	1.6	0.9	3,264	2.7	1.1
Mining (separate from above)*	(6,282)	(7.6)	(8,726)	(8.1)	(0.5)	(8,851)	(7.3)	(-0.8)
TOTALS	82,259		107,836		31.1	120,812		12.0

*People listed in "Mining" have been included in the total work force under the classification of "Operatives and Kindred Workers".

Source: U. S. Bureau of Census, Population Census: Wyoming Detailed Characteristics of the Population, 1940, 1950, 1960.

APPENDIX TABLE IV
TOTAL AND FIRST-TIME FALL DEGREE-CREDIT ENROLLMENT IN INSTITUTIONS OF HIGHER EDUCATION, BY SEX: UNITED STATES, 1953 TO 1973

Fall	Total Fall Enrollment			First-Time Fall Enrollment		
	Total	Men	Women	Total	Men	Women
			ACTUAL			
1953	2,235,977	1,425,298	810,679	567,284	342,528	224,756
1954	2,452,466	1,566,737	885,729	626,403	383,720	242,683
1955	2,660,429	1,737,469	922,960	670,013	415,604	254,409
1956	2,927,367	1,916,802	1,010,565	717,504	442,903	274,601
1957	3,047,373	1,991,411	1,055,962	723,879	441,969	281,910
1958	3,236,414	2,098,164	1,138,250	775,308	465,422	309,886
1959	3,377,273	2,160,886	1,216,387	821,520	487,890	333,630
1960	3,582,726	2,256,877	1,325,849	923,069	539,512	383,557
1961	3,860,643	2,408,601	1,452,042	1,018,361	591,913	426,448
1962	4,174,936	2,587,291	1,587,645	1,030,554	598,099	432,455
1963	4,494,626	2,772,562	1,722,064	1,046,417	604,282	442,135
			PROJECTED			
1964	4,775,000	2,963,000	1,812,000	1,255,000	757,000	498,000
1965	5,220,000	3,236,000	1,984,000	1,379,000	832,000	547,000
1966	5,668,000	3,507,000	2,161,000	1,374,000	828,000	546,000
1967	6,074,000	3,751,000	2,323,000	1,398,000	840,000	558,000
1968	6,397,000	3,936,000	3,461,000	1,448,000	867,000	581,000
1969	6,674,000	4,088,000	2,586,000	1,515,000	905,000	610,000
1970	6,959,000	4,244,000	2,715,000	1,588,000	945,000	643,000
1971	7,276,000	4,428,000	2,848,000	1,658,000	984,000	674,000
1972	7,611,000	4,628,000	2,983,000	1,719,000	1,017,000	702,000
1973	7,951,000	4,837,000	3,114,000	1,769,000	1,044,000	725,000

Source: U. S. Department of Health, Education and Welfare, Projections of Educational Statistics to 1973-74 (Washington, D. C., 1964), p. 6.

APPENDIX TABLE V
TWO-YEAR COLLEGES IN THE UNITED STATES

State	Number of Two-Year Colleges			Total Enrollment October, 1964	State	Number of Two-Year Colleges			Total Enrollment October, 1964
	Public	Indep.	Total			Public	Indep.	Total	
Alabama	2	6	8	2,323	Montana	2	---	2	614
Alaska	6	1	7	1,314	Nebraska	4	1	5	1,890
Arizona	4	---	4	15,550	New Hampshire	---	2	2	698
Arkansas	1	4	5	2,437	New Jersey	1	10	11	6,731
California	74	5	79	444,948	New Mexico	5	---	5	2,005
Colorado	6	---	6	5,446	New York	34	35	69	89,164
Connecticut	6	9	15	13,451	North Carolina	4	15	19	11,547
Delaware	---	1	1	801	North Dakota	4	---	4	3,335
Dist. of Columbia	---	3	3	729	Ohio	4	5	9	12,488
Florida	29	3	32	48,448	Oklahoma	11	5	16	9,284
Georgia	9	10	19	10,917	Oregon	8	2	10	11,475
Hawaii	---	1	1	186	Pennsylvania	15	20	35	22,575
Idaho	2	1	3	5,645	Rhode Island	---	3	3	1,685
Illinois	25	13	38	57,805	South Carolina	---	6	6	2,894
Indiana	1	1	2	895	South Dakota	---	2	2	305
Iowa	17	4	21	8,574	Tennessee	---	7	7	2,778
Kansas	14	5	19	9,507	Texas	33	12	45	50,131
Kentucky	8	8	16	5,422	Utah	3	---	3	1,813
Louisiana	---	1	1	60	Vermont	1	4	5	2,257
Maine	---	2	2	664	Virginia	7	10	17	7,050
Maryland	12	5	17	11,689	Washington	15	---	15	29,527
Massachusetts	10	16	26	19,603	West Virginia	1	2	3	1,724
Michigan	18	3	21	48,605	Wisconsin	10	2	12	12,986
Minnesota	11	2	13	5,857	Wyoming	5	---	5	3,307
Mississippi	17	10	27	13,041					
Missouri	9	10	19	18,390	TOTAL	448	267	715	1,040,570

Source: Facing Facts About Two-Year Colleges (Newark, N. J.: The Prudential Insurance Company of America, 1965), p. 19.

APPENDIX TABLE VI
TOTAL FALL DEGREE-CREDIT ENROLLMENT IN INSTITUTIONS OF HIGHER EDUCATION, BY LEVEL
UNITED STATES, 1953 TO 1973

Fall	Total	Undergraduate and first-professional	Graduate
1953	2,236,000	2,017,000	219,000
1954	2,452,000	2,215,000	237,000
1955	2,260,000	2,007,000	253,000
1956	2,927,000	2,652,000	275,000
1957	3,047,000	2,755,000	292,000
1958	3,236,000	2,920,000	316,000
1959	3,377,000	3,039,000	338,000
1960	3,583,000	3,222,000	361,000
1961	3,861,000	3,465,000	396,000
1962	4,175,000	3,750,000	425,000
1963	4,495,000	4,020,000	475,000
		PROJECTED	
1964	4,775,000	4,277,000	498,000
1965	5,220,000	4,675,000	545,000
1966	5,668,000	5,089,000	579,000
1967	6,074,000	5,445,000	629,000
1968	6,397,000	5,696,000	701,000
1969	6,674,000	5,924,000	750,000
1970	6,959,000	6,182,000	777,000
1971	7,276,000	6,467,000	809,000
1972	7,611,000	6,766,000	845,000
1973	7,951,000	7,066,000	885,000

Source: U. S. Department of Health, Education, and Welfare, Projections of Educational Statistics to 1973-74 (Washington, D. C., 1964), p. 8.

APPENDIX TABLE VII
WESTERN REGIONAL STUDENT PROGRAM
Institutional Offerings for 1965-66

State and School	Curricula	*Beginning Levels
ALASKA		
University of Alaska	Artic Wildlife Management	3
College	Eskimo Language and Culture	1
ARIZONA		
Arizona State College	Forestry	2½
Flagstaff	School Administration-Educational	
	Specialist Degree	
	Elementary Principal	6
	Secondary Principal	6
	Superintendent	6
University of Arizona	Geochronology	5
Tucson	Hydrology	1, 5, & 6
	Oriental Studies	1 & 5
COLORADO		
Adams State College	Cultural Relations	5
Alamosa	Speech Pathology & Audiology Program	3, 4, & 5
Colorado State University	Acarology	5
	Atmospheric Science	5
	Biomathematics	5
	Mathematical Statistics	5
	Radiation Biology	5
	Watershed Management	5
University of Colorado	Classics	
Boulder	Greek	1 & 5
	Latin	1 & 5
	Nuclear Physics	5

APPENDIX TABLE VII (Continued)
WESTERN REGIONAL STUDENT PROGRAM
Institutional Offerings for 1965-66

State and School	Curricula	*Beginning Levels
HAWAII		
University of Hawaii Honolulu	Anthropology of Pacific and Asian Peoples	3, 4, & 5
	Asian and Comparative Philosophy	3, 4, 5, & 6
	Asian and Pacific Art and Music	3, 4, & 5
	Asian Cultures: History, Area Studies	3, 4, & 5
	Dental Hygiene	1 & 2
	Drama and Theatre: Oriental and Western Play Production	1, 2, 3, 4, & 5
	Languages of Asia and the Pacific	
	Chinese	1-5
	Hawaiian	1, 2 & 3
	Hindi	1, 2 & 3
	Indonesian	1, 2 & 3
	Japanese	1-5
	Javanese	1, 2 & 3
	Korean	1, 2 & 3
	Pali	1, 2 & 3
	Sanskrit	1, 2 & 3
	Thai	1, 2 & 3
	Tagalog	1, 2 & 3
	Linguistics	5 & 6
	Marine Biology	5
	Oceanography	5 & 6
	Public Health	5
	Sociological Aspects of Racial Intermixture	3, 4 & 5
	Teaching of English as a Second Language	5
	Tropical Agriculture	3, 4, 5, & 6
	Tropical Soils	5 & 6
IDAHO		
Idaho State University Pocatello	Anthropology	3

APPENDIX TABLE VII (Continued)
WESTERN REGIONAL STUDENT PROGRAM
Institutional Offerings for 1965-66

State and School	Curricula	*Beginning Levels
NEW MEXICO		
Eastern New Mexico University Portales	Civil Technology	1
	Data Processing	1
	Drafting & Design Technology	1
	Medical Secretarial	1
	Medical Technology	1
	Teachers of the Deaf	5
New Mexico Highlands University Las Vegas	Technical Institute	1
New Mexico State University University Park	Computer Technology-Data Processing	1
	Engineering Technology (civil, electronic, mechanical)	1
	Journalism and Mass Communications	1
	Police Science	1
	Sanitary Engineering	5
	Speech Therapy	3 & 5
The University of New Mexico Albuquerque	Nursing	1
	Journalism	1
Western New Mexico University Silver City	Accounting	1
	Engineering Technology	1 or 2
	General Business	1
	Guidance and Counseling	5
	Home Economics	1
	School Administration & Supervision	5
	Secretarial Science	1
	Special Education for Exceptional Children	3

APPENDIX TABLE VII (Continued)
WESTERN REGIONAL STUDENT PROGRAM
Institutional Offerings for 1965-66

State and School	Curricula	*Beginning Levels
OREGON		
Oregon College of Education	Teaching the Deaf	5
Monmouth	Vocational Rehabilitation Counselors of the Deaf	5
Oregon State University	Child Development	5 & 6
Corvallis	Family Relations	5 & 6
	Farm Crops	5 & 6
	Fisheries and Wildlife	5 & 6
	Foods and Nutrition	5 & 6
	Food Science	5 & 6
	Forest Engineering	5
	Forest Management	5 & 6
	Forest Products	5
	General Science	5
	Natural Resources	5
	Oceanography	5 & 6
	Pharmaceutical Chemistry	5 & 6
	Pharmaceutical Science	5 & 6
	Pharmacognosy	5 & 6
	Pharmacology	5 & 6
	Poultry Science	5 & 6
	Range Management	5 & 6
	Soils	5 & 6
University of Oregon	Behavioral & Operations Research	5 & 6
Eugene	Creative Writing	5
	Drosophila Genetics	6
	East Asian Studies	5
	Education of Exceptional Children	5 & 6
	English (Linguistics)	5 & 6
	Forestry Industry Management	5 & 6
	Industrial Management	5 & 6
	International Studies	5 & 6

APPENDIX TABLE VII (Continued)
WESTERN REGIONAL STUDENT PROGRAM
Institutional Offerings for 1965-66

State and School	Curricula	*Beginning Levels
OREGON		
University of Oregon (Continued)	Journalism	5
	Landscape Architecture	5
	Marine Biology	6
	Neurophysiology	6
	Overseas Administration	5
	Recreation Management	5 & 6
	Sculpture & Ceramics	5
	Transportation	5 & 6
Portland State College Portland	Social Work	5
Southern Oregon College Ashland	Theater (including classical theater option)	1, 2, & 3
UTAH		
Utah State University Logan	Aphidology	5
	Biochemical Genetics	5
	Biological Statistics (Computers)	5
	Computer Operations Research	5
	Education for Mental Health in the Classroom	5
	Experimental Design (Computers)	5
	Identification and Education of Emotionally Handicapped	5
	Industrial Education	6
	Intermediate Statistical Methods (Computers)	5
	Petrogenesis	6
	Quantum and Solid State Electronics	5
	Radiometry	5
	Regional Tectonics	5

APPENDIX TABLE VII (Concluded)
WESTERN REGIONAL STUDENT PROGRAM
Institutional Offerings for 1965-66

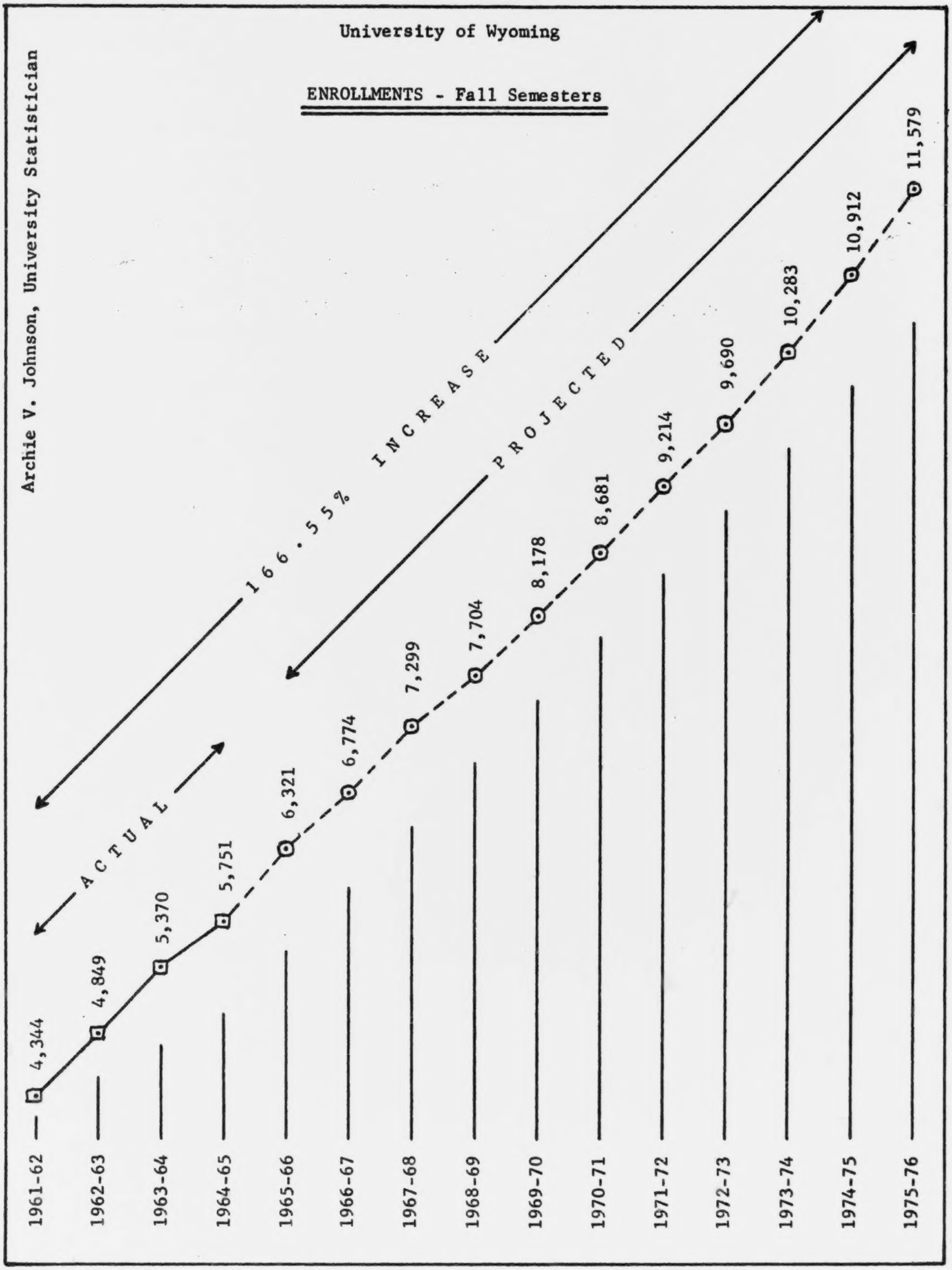
State and School	Curricula	*Beginning Levels
UTAH Utah State University (Continued	Space Science and Engineering	5
	Student Teaching and Internships in Classes for Teachers of Emotionally Disturbed Children	5
	Statistical Communication Theory	5
	Surficial Geology	5
	Theory of Linear Systems	5
University of Utah Salt Lake City	Ceramic Engineering	5
	Meteorology	5
	Middle Eastern Studies	5
	Social Work	5
	Special Education (Preparation of Teachers for Mentally Retarded)	5
WYOMING University of Wyoming Laramie	Adult Education	5
	American Studies	5
	Educational Administration	5
	Geology	3 & 5
	Guidance	5
	Microbiology	3 & 5
	Petroleum Engineering	1 & 5
	Plant Biochemistry	5
	Range Management	3
	Wildlife Conservation	5
	Wool Technology	5

*Legend: 1-Freshman; 2-Sophomore; 3-Junior; 4-Senior; 5-Master's; 6-Doctor's.

NOTE: Some institutions are able to waive out-of-state tuition only if the student is eligible for an assistantship. Some curricula are open to only limited numbers of students.

Source: Western Regional Student Program, New Educational Opportunities for Western Students, published by Western Interstate Commission for Higher Education, Boulder, Colorado.

APPENDIX FIGURE 1



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